

FEATURING • CONSTRUCTION^P LESSONS FROM SANTA BARBARA

PACIFIC·COAST ARCHITECT

WITH WHICH IS INCORPORATED THE BUILDING REVIEW



VOLUME XXVIII • SEPTEMBER • 1925 • NUMBER • THREE
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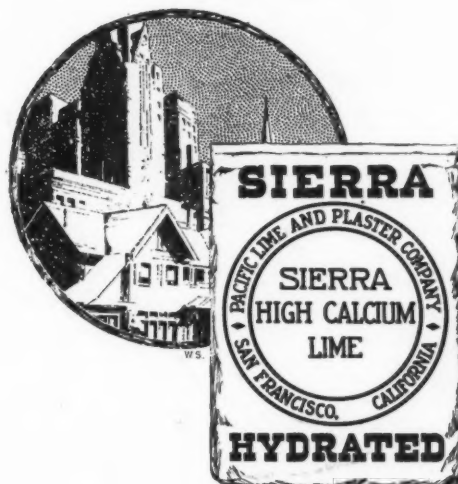
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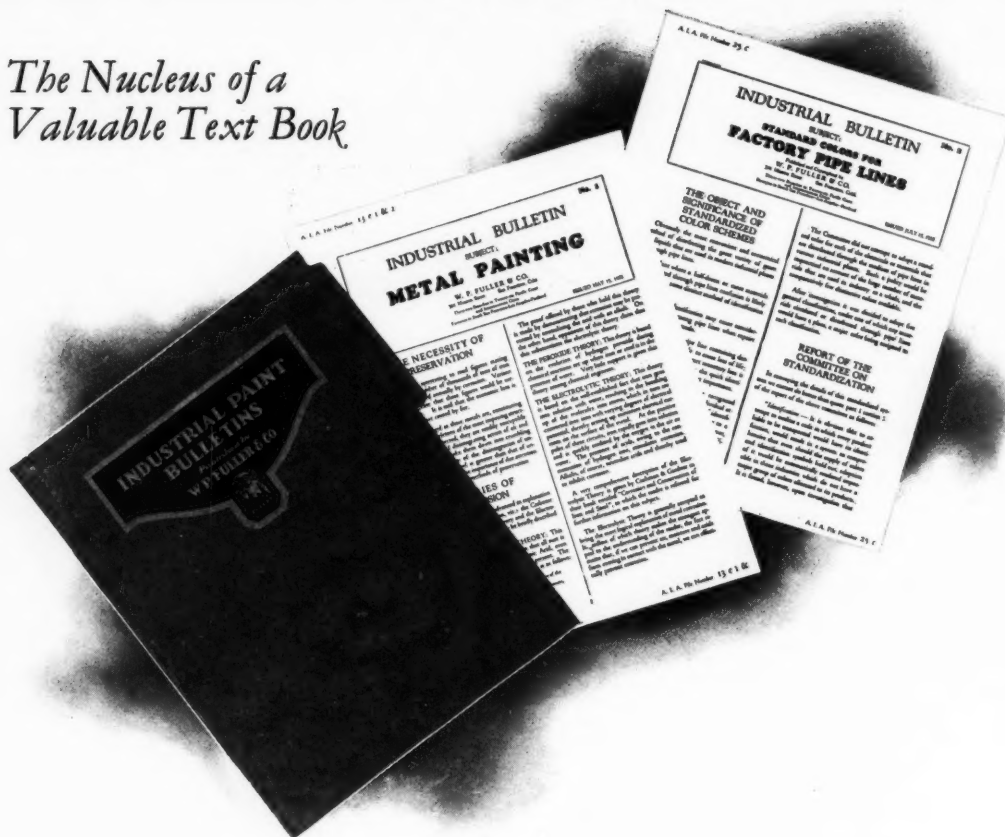
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- How Does Paint Preserve Wood?
- Painting Light Colors on Bituminous Compounds

These are, however, but a small number of the entire list of subjects which eventually will be covered by these bulletins. If you have not received a copy of Bulletins Nos. 1 and 2 with a filing folder as illustrated, we will gladly send you a copy.

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SAN FRANCISCO AND
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THE SANTA BARBARA MISSION, AFTER AN ETCHING BY ED BOREIN

PACIFIC · COAST · ARCHITECT

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VOLUME XXVIII · SAN FRANCISCO AND LOS ANGELES · SEPTEMBER, 1925 · NUMBER THREE

CONSTRUCTION LESSONS FROM SANTA BARBARA

I

[BY DR. BAILEY WILLIS, STANFORD UNIVERSITY]

President Seismological Society of America



ALO ALTO'S Chamber of Commerce has taken the first step toward providing that buildings shall be erected in a manner calculated to provide safety in case of an earthquake. So far as is known this is the first step not only in this particular case, but the first of its kind taken by any community in California. The Committee on Safety and Fire Prevention, at a meeting held on July 24th, adopted the provisions published below and forwarded them to the directors of the Chamber with recommendation for favorable action.

It was fully realized that if adopted by the city council as a part of the building code these regulations would materially affect the conditions of construction within their jurisdiction. They were, therefore, thoroughly discussed with reference to the policy they involve in recognizing the earthquake risk as well as with regard to the additional costs, which might be occasioned. The opinion of the committee might be summed up in the phrase that it is better to be safe than sorry.

The proposed regulations, as they stand, represent the kernel of much discussion. They have been stripped of details and specifications in order that they might express a group of general principles instead of presenting a list of special requirements. They may also be said to be a by-product of the deliberations of the Committee on Building for Safety against Earthquakes, which was organized under the auspices of the Seismological Society of America about a year ago. That committee is made up as follows:

American Institute of Architects: Mr. Sumner Hunt, of Los Angeles.

Board of Fire Underwriters of the Pacific: Mr. Thos. McCaughern.

City of San Francisco: Mr. R. P. McIntosh, Bureau of Public Works.

City of Los Angeles: Mr. C. T. Manwaring, of the Committee on Safety and Fire Prevention of the Chamber of Commerce.

National Board of Fire Underwriters: Mr. R. E. Andrews, Assistant Chief Engineer, San Francisco.

Seismological Society of America: Mr. Robert Anderson, Professor S. D. Townley, Secretary, and Dr. Bailey Willis, Chairman.

Society of American Civil Engineers: Mr. Henry Dewell, San Francisco.

The committee has had several meetings and has a report in preparation. In its deliberations it has taken advantage of the experience afforded by the Chilean shock of November 10, 1922, of the significant effects of the Tokyo earthquake, and now of those of the Santa Barbara incident. It is not, however, responsible for the draft of provisions adopted by the Palo Alto committee. That

was originally prepared by three Stanford men, Professor C. D. Marx, Professor C. B. Wing, and Dr. Bailey Willis. It was then submitted to some of the most eminent engineers and architects of San Francisco and Los Angeles, and has been modified to meet their criticisms. It will no doubt meet with further criticism and is likely to be amended to suit various local conditions. It represents, however, a sincere effort to provide a basis for better building with reference to the earthquake hazard.

PROPOSED ADDITION TO A BUILDING CODE SECURITY AGAINST EARTHQUAKES

Provisions for security against the effects of earthquake shocks and vibrations shall be incorporated in all structures built under this code in the manner specified in the following paragraphs. The provisions here stated shall govern in case of any difference of interpretation between this and other sections of the code.

Foundation material. The natural material upon which the foundations of a structure stand shall be known as the foundation material and shall be classed under one of three types, according to its nature, namely (1) firm rock; (2) hardpan, gravel, and sand in the natural bed; (3) adobe, muck and made ground.

Earthquake force. The earthquake force shall be taken as a horizontal force acting at the base of the foundations with an intensity dependent in any case upon the nature of the foundation material. The following intensities shall be taken as the minimum factors to be used in calculating the stresses that will be set up on the foundation and superstructure.

Foundation material	Intensity Rossi-Forel	Acceleration feet per sec. per sec.	Lateral pressure per sq. ft. of vertical area above ground
(1) Firm rock.....	VIII	3	20
(2) Hardpan, gravel and sand.....	IX	5	30
(3) Muck or made ground	X	7	45

Use of the table. Calculations of the stresses that will be imposed by the earthquake force may be based either on the acceleration per second per second or on the lateral pressure per square foot. In most cases the two methods of calculation give different results. If the acceleration be used the mass of the building is involved as a factor in the moment of inertia; if lateral pressure per square foot be used it is the area of the side that is involved. For a building of large mass but small area the acceleration will give the larger stresses and demand the stronger construction. For a building of small mass and large area the lateral pressure will give the larger stresses and demand firmer bracing. That expression for the earthquake force, either acceleration or lateral pressure, which requires the stronger structure shall be used. The figures for the acceleration represent the minimum earthquake force which can safely be assumed as determined from observations on structures in the California earthquake of 1906. The figures for lateral pressure are based on the estimates of the Committee which represented the Society of American Civil Engineers in the investigation of the same shock.

Bearing walls. Bearing walls are permissible to a height of 45 feet on foundation materials 1 and 2, but shall not exceed 30 feet in height on foundation materials of class 3.

Materials and bonding. All materials and construction shall be of the highest quality, as required under the terms of this ordinance. The structure and its parts shall be firmly tied together. In all cases the bonds shall be calculated to resist the stress that will be set up by the inertia of the mass moving with the acceleration corresponding to the foundation material as specified in the preceding table, or the stress corresponding to the equivalent lateral pressure.

(Concluded on page 53)

PROPER CONSTRUCTION IS CALIFORNIA'S NEED

BY MARK C. COHN

Consultant to Pacific Coast Building Officials' Conference

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SANTA BARBARA'S recent experience has again aroused public consciousness to the need for safeguarding against the action of the elements. Earthquakes make their unbidden appearance, but not entirely without warning, for learned scientists see nothing unusual in this phenomenon and calmly predict temblors with an uncanny degree of accuracy.

The earthquakes in Santa Barbara, although more severe than the slight tremors reported daily throughout the world, caused very few fatalities. Only twelve deaths have been reported.

In comparison, in very large centers of population many fatalities occur from automobile accidents every week-end. Fire underwriters' reports show approximately forty deaths from fire every twenty-four hours and a greater number maimed and injured.

The actual property damage in Santa Barbara compares favorably with property losses caused by fires every month in America. And here is an important fact: the majority of fires actually are preventable, but earthquake prevention is still more or less a thing of conjecture. Yet an analysis of underwriters' reports shows a loss of more than \$1,400,000 every twenty-four hours from fires.

Hysteria and exaggeration usually accompany and follow an earthquake. This state of mind too often prevails whenever an accident or catastrophe occurs. At this time calm thinking and calm action are essential. Unwise enactments imposing theoretical regulations may restrict freedom of construction to a harmful degree.

If history repeats itself, the temblor in Santa Barbara

will prove little more than a disturbing ripple so far as the progress of California is concerned. Comparatively few buildings suffered real material damage. Comparable with the spirit displayed in San Francisco in 1906, the city of Santa Barbara already is being rebuilt. And again, should history repeat itself, the new city will be built better and bigger than before.

Yet this jolt furnishes an object lesson of the need for better and safer building construction. Professor Bailey Willis of Stanford University says it is not a matter of materials but a matter of proper design that will make for practically earthquake-proof buildings. From all reports this contention is borne out by the Santa Barbara earthquake.

All types of construction, properly designed and with ample foundations and footings, withstood the temblor in reasonably good shape. Regardless of the materials used or the particular type of construction employed the damage was about the same in every building which violated established fundamentals of design and good construction. "Jerry" building and lack of field inspection are bound to make for failures in the case of earth movements.

There is ample evidence that an earthquake fault extends through a strip of California reaching from nearly one end of the state to the other. The problem, therefore, becomes a state affair rather than merely one for each municipality to grapple. To safeguard against earthquake damage, all Pacific Coast cities in their building operations must co-ordinate action through building inspection agencies. This is not the time for unsupported theories from persons and interests unqualified to make recommendations dispassionately, or persons prejudiced in favor of particular types of construction or materials in which they may have a direct or indirect interest.

AVOID FAULTY BUILDING, SAY ENGINEERS

BY HOWARD G. HANVEY

PACIFIC COAST cities should launch at once a campaign of education that would safeguard San Francisco and other metropolitan areas from such losses as were sustained by Santa Barbara during the recent earth tremor.

This is the assertion of J. G. Little, head of the J. G. Little Company of San Francisco, consulting engineers who, with H. J. Brunnier and T. Ronneberg, two other engineers of prominence in San Francisco, has just completed an extensive survey of the effect of the quake on modern construction.

Mr. Little was for years consulting structural engineer of the Bureau of Building Inspection of San Francisco, and is chief engineer of the Antioch and the proposed San Francisco-Alameda bridges. Mr. Brunnier was consulting engineer of the Standard Oil Building of San Francisco, and Ronneberg of the new Pacific Telephone and Telegraph Building of the same city.

"A similar earth tremor would not have wrought nearly the damage in San Francisco that Santa Barbara sustained," said Mr. Little. "There are buildings in San Francisco, however, which through faulty construction, would suffer. Such modern steel buildings, however, as

the Standard Oil and Telephone Building would not be injured.

"The greatest cause of damage we believe in Santa Barbara was due to faulty methods of construction. The Post Office Building, however, which is a modern steel frame structure, and the only one in Santa Barbara, passed through the shocks which toppled around it buildings less resistant to earth shocks.

"San Francisco has just adopted one of the most modern steel construction building codes used by any city. It was advocated by the California Institute of Steel Construction and formulated by a special committee of some of the most eminent of America's engineers for the American Institute of Steel Construction.

"Owners constructing buildings honestly in accordance with this code need fear no loss from earthquakes of the character that visited Santa Barbara.

"We are convinced that if there was only some way to educate the public as to the necessity for engaging competent engineers and architects who would insure proper design from a structural point of view, and skilled supervision as to materials and details of construction, there would be nothing to fear from any earth shocks."

A CATHEDRAL OF LEARNING



EARLY in October ground will be broken for the 52-story "Cathedral of Learning" for the University of Pittsburgh. Three years will see the completion of this unique Gothic structure, 260 by 360 feet at its base, soaring to a height of 680 feet, high above the thousand Pittsburgh factories and hills.

The structure which will serve as the central building for the University, will accommodate 12,000 students. It will house all of the departments of the University except those of medicine and dentistry. It will provide class rooms, libraries, laboratories, shops and recreational centers for students and faculty.

The "Cathedral of Learning" is the culmination of Chancellor John G. Bowman's vision of creating a great urban University which will reflect the virile spirit of achievement of Pittsburgh. The up-rising masses of the building express forcibly the striving and the hope that should be a University's. At the same time the memorial classroom, laboratories, libraries and tablets will keep vivid the lives of those who have made Pittsburgh more than a center of wealth and industry. To execute this plan of Chancellor Bowman, Mr. Charles Z. Klauder, an outstanding student of Gothic collegiate architecture in this country, was chosen.

A University Citizens' Committee, broadly representative of the district's interests, assumed the responsibility of raising the \$10,000,000 necessary to build the "Cathedral of Learning." In an intensive solicitation for contributions to the University's building fund, extending over a period of two months, more than \$7,000,000 has been raised, practically entirely in the Pittsburgh district.

This sum represents more than 8,000 separate subscriptions from industrial corporations, mercantile establishments, financial institutions and individuals. No comparable sum has ever been raised in the community for any other purposes through voluntary solicitation except for the late war loans. Practically ever interest in the district has supported the enterprise. Alumni raised \$1,000,000. Students and faculty members pledged nearly \$400,000. Ninety-three thousand Pittsburgh school children contributed ten cents each of money earned by themselves.

Several million dollars remain yet to be raised. This task will be accomplished and entirely completed by fall.

The cost of high construction per cubic foot is somewhat higher than for low structures. This greater cost is largely offset by a greater percentage of effective area obtainable in the high building. High construction offers better ventilation, better light, less noise and less dust. The cost of heat, upkeep and janitorial service favors high construction. The saving in land for building space has been estimated at approximately \$2,000,000.

Tenney & Ohmes, of New York, and Stone & Webster, of Boston, two of the country's outstanding engineering firms, have declared the structure entirely practicable and without any unusual problems of construction.

Educationally the "Cathedral of Learning" is to be as unique, as significant, as it is architecturally. There is not to be a single barren, ugly recitation room. Rows of chairs are to disappear. It is planned to make each room beautiful. They are to resemble private studios. The chairs are not to be alike. The best chair is to be occupied by the teacher, not by virtue of his position but by virtue of his integrity, his character, his intelligence and the high motive of his life. Good pictures are to hang upon the walls.

Of all the means at the disposal of an architect by which to convey active emotions, those of mass and proportion are most effective. In fact, any tremendous or powerful rush of feeling expressed through architecture is much dependent upon them. A building, therefore, let us say four stories high, is incapable of supreme expression of power in action because it cannot offer this free sweep to the imagination.

The University desires, now, as already stated, to interpret by its proposed building the active emotions of courage, daring, achievement, together with spiritual aspiration. How can this be done? First, the use of mass and proportion is imperative. This use requires height. Mere size will not "ennoble a mean design, yet every increase of magnitude will bestow upon it a certain degree of nobleness," says Ruskin.

"No architect in all history," said Mr. Klauder, when he first undertook the design, "was ever before given such an opportunity. The use of mass and proportion is unlimited; ornamentation is scarcely needed at all; and the whole structure is unhampered by its surroundings."

SANTA BARBARA AND THE BRICK INDUSTRY

SANTA BARBARA has been the Mecca for everyone interested in the building industry, affording opportunity to study the effect of the unusual.

That it has been the subject of study by national associations is natural and the monthly digest of conditions in the common brick industry, prepared by the Common Brick Manufacturers of America, is devoted to a brief discussion. The report says:

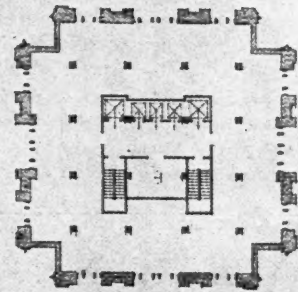
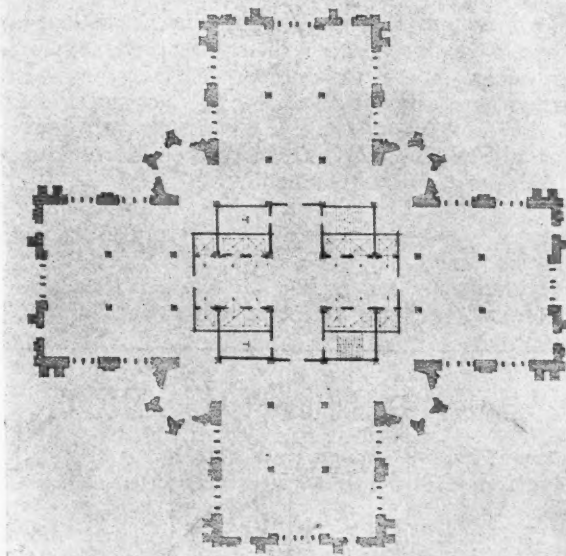
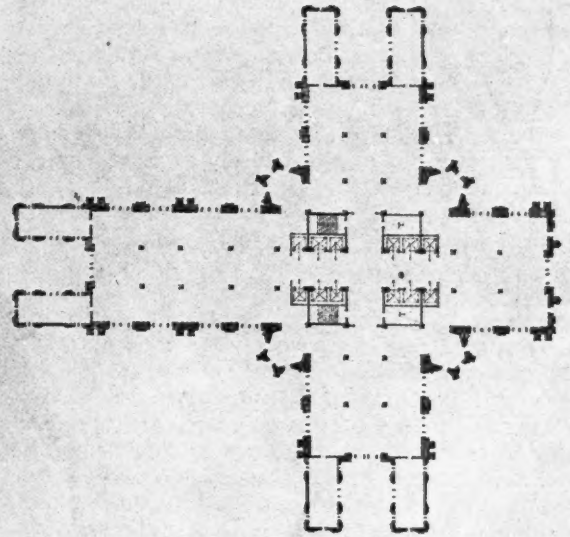
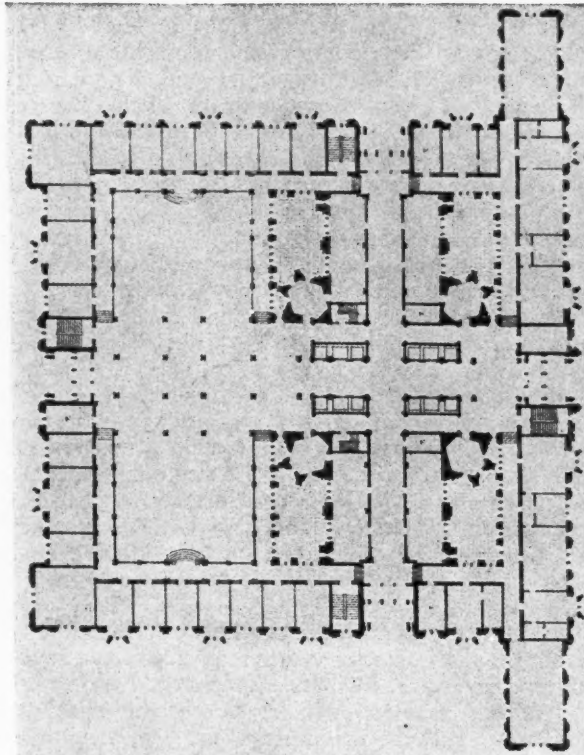
"The lesson of the earthquake in Santa Barbara is that good, honest brickwork will withstand even a very severe tremor without damage. Early reports from Santa Barbara were misleading, and naturally so, because it appeared that many brick buildings had been wrecked.

"Perhaps no disaster has been more thoroughly and carefully investigated by experts than has that at Santa Barbara, and from these investigations there comes unanimously this lesson: Good construction of practically every kind withstood the shock. Inferior construction, regardless of the materials used is unsuited to earthquake zones. In the very heart of the business section of Santa

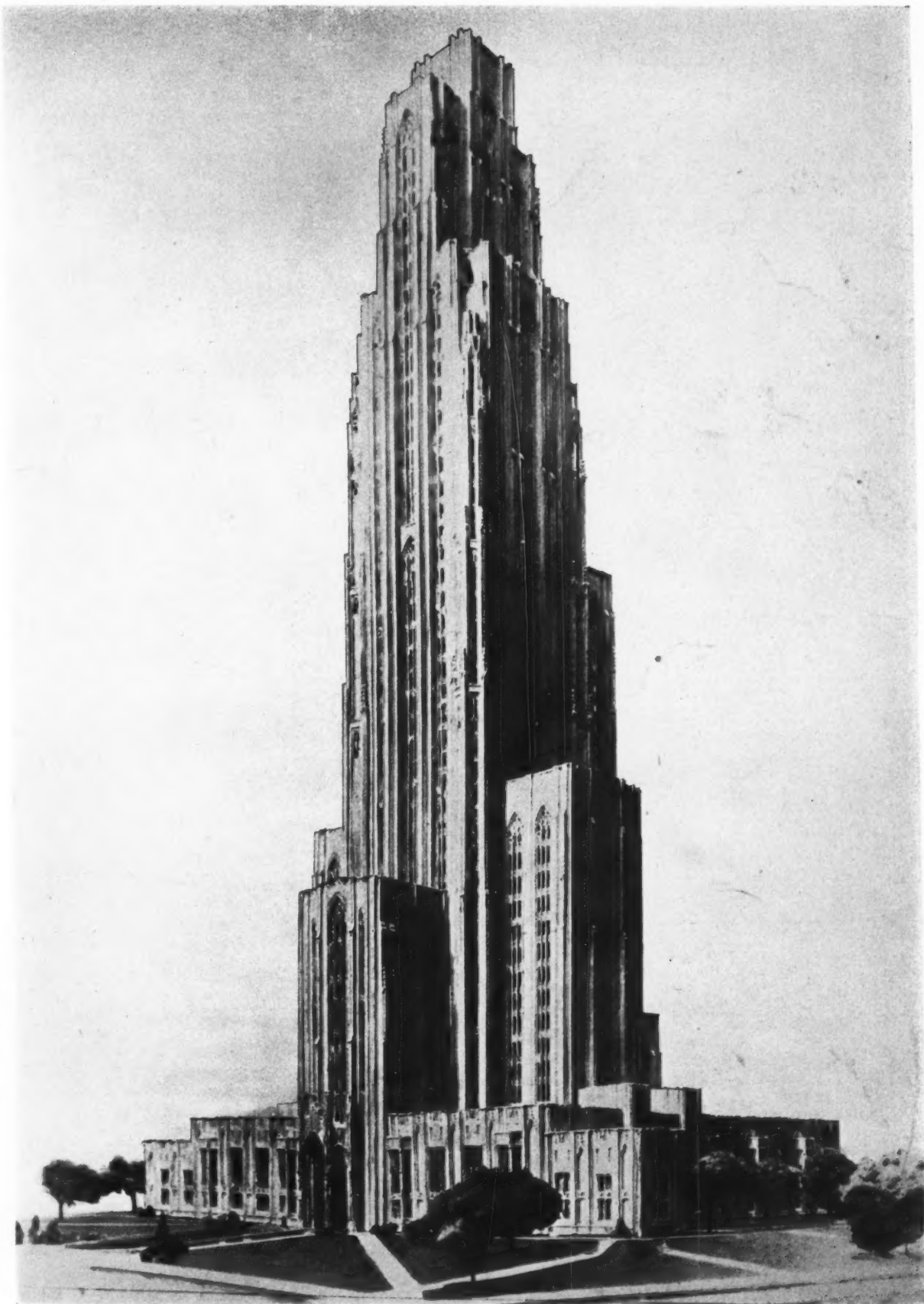
Barbara, where the greatest damage was done, there stand today solid brick wall structures that are wholly undamaged.

"The brick industry in the future will put special emphasis on these points: (1) Cross walls tied or bonded thoroughly to the mainwalls. (2) Proper ties and anchors at floor and roof lines. (3) The use of strong mortar. (4) Braces for all walls extending above the roof line. (5) And the thorough wetting of brick prior to being placed in the wall.

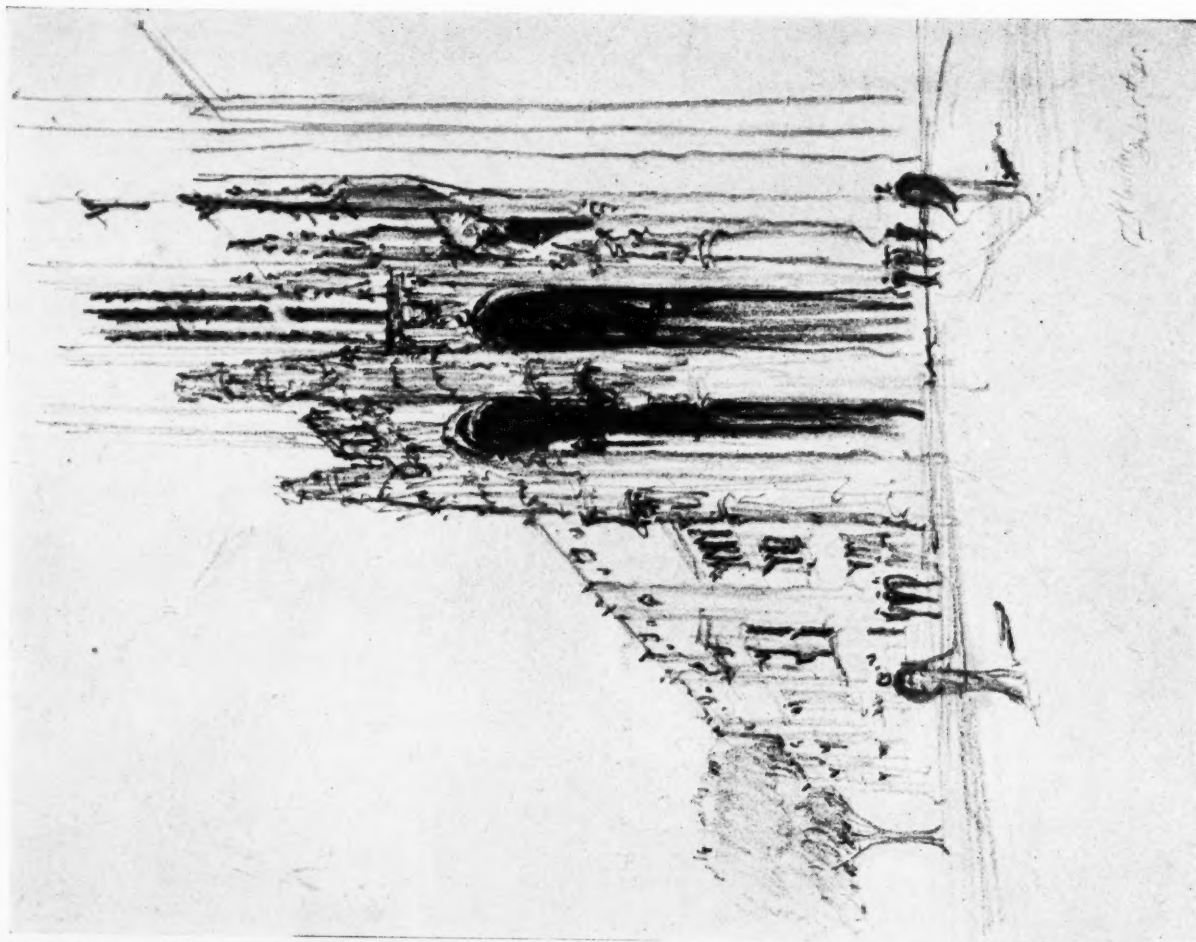
"Fourteen secretaries of the group associations affiliated with The Common Brick Manufacturers' Association of America met in conference at Cleveland on July 23rd and 24th to study engineers' reports from both the Montana and Santa Barbara earthquakes. These group associations, covering nearly the entire country, will work in unison in promoting better brickwork and actively pursue a relentless campaign against the 'jerry' builder, and all others who sacrifice safety and permanency to cost."



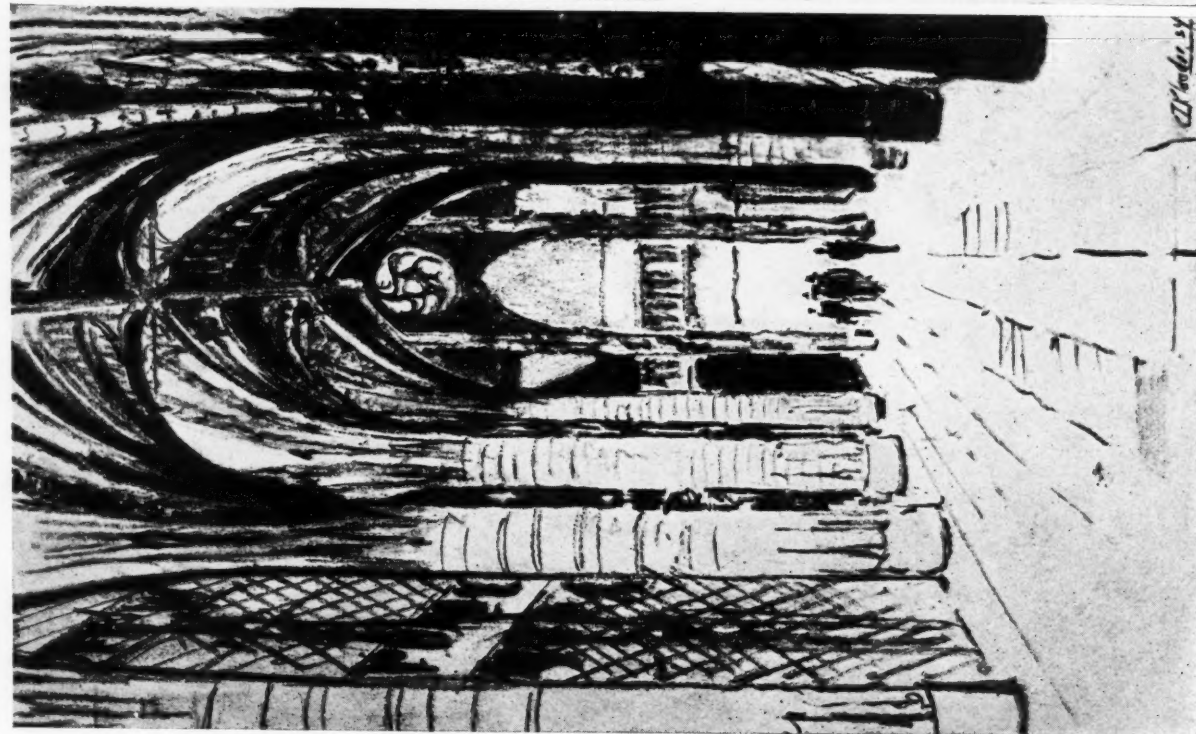
FIRST FLOOR PLAN
ELEVENTH TO THIRTIETH FLOOR PLANS
FIFTH TO TENTH FLOOR PLANS
THIRTY-FIRST TO FORTIETH FLOOR PLANS
"CATHEDRAL OF LEARNING," PITTSBURGH, PENNSYLVANIA. CHARLES Z. KLAUDER, ARCHITECT



THE "CATHEDRAL OF LEARNING," UNIVERSITY OF PITTSBURGH, PENNSYLVANIA. CHARLES Z. KLAUDER, ARCHITECT

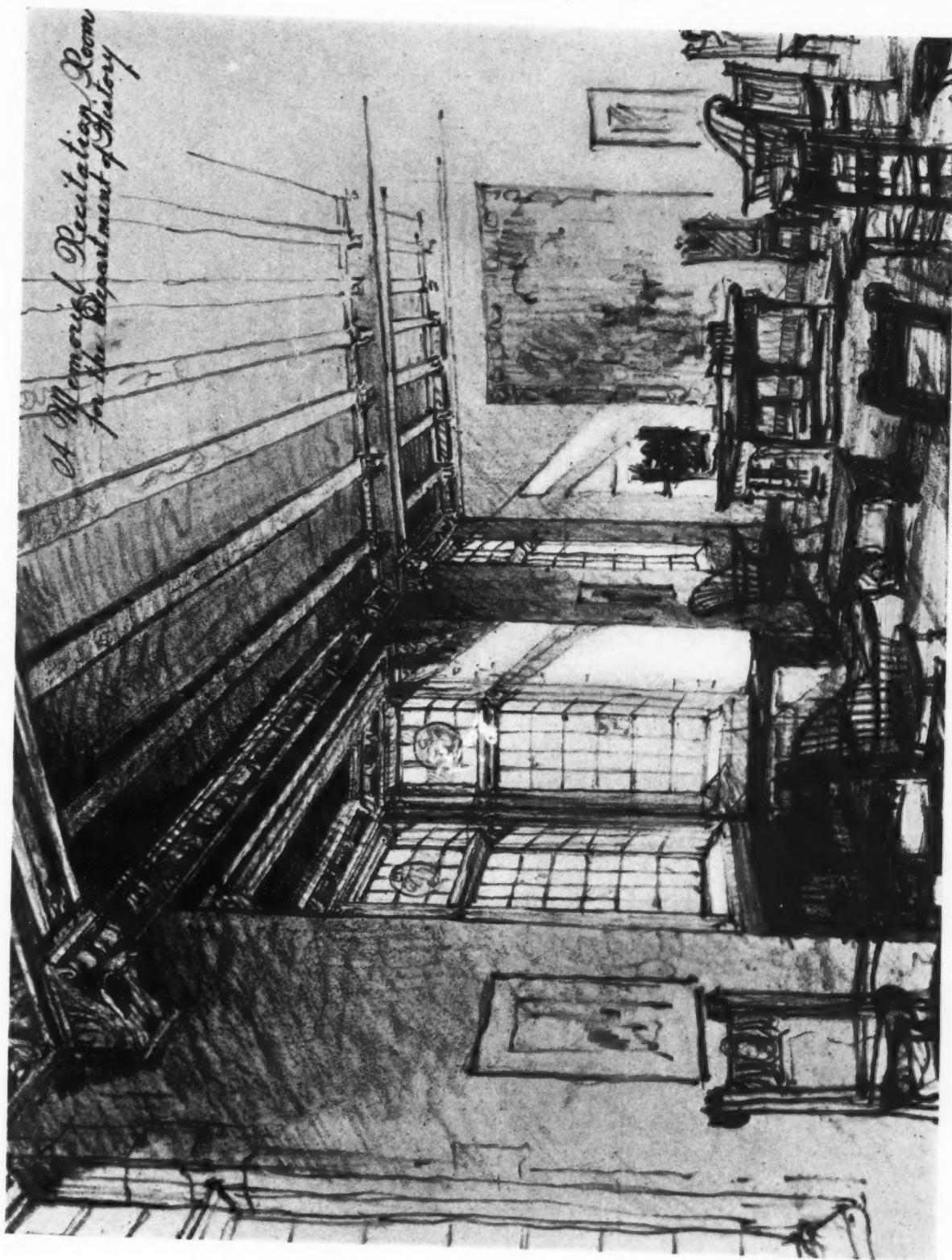


MAIN ENTRANCE, ARCH THIRTY-NINE FEET HIGH.



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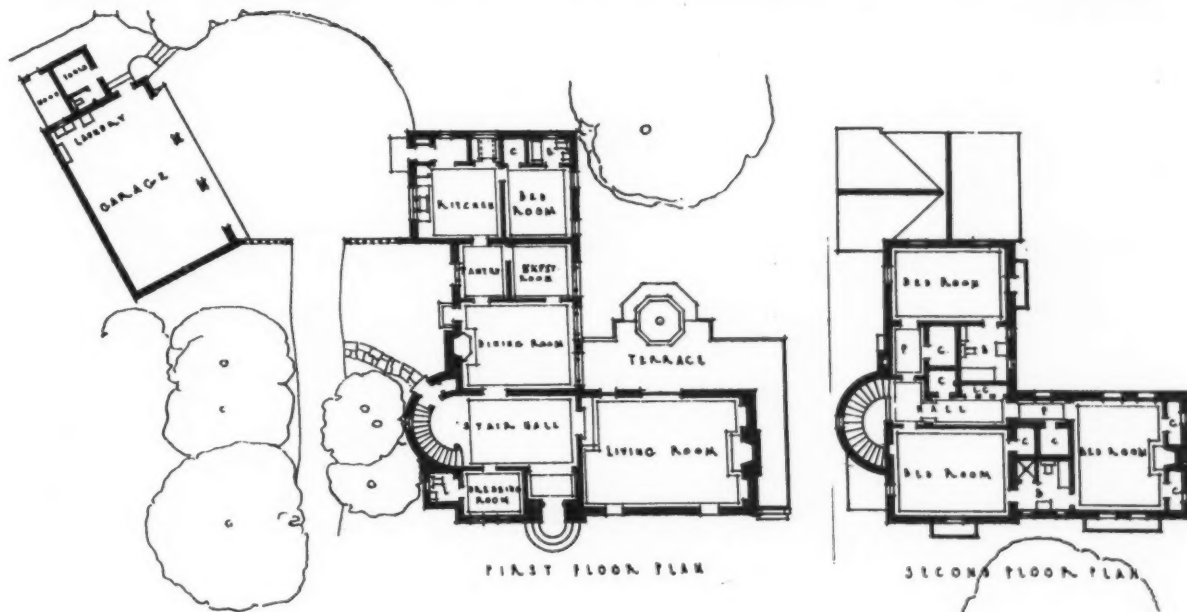
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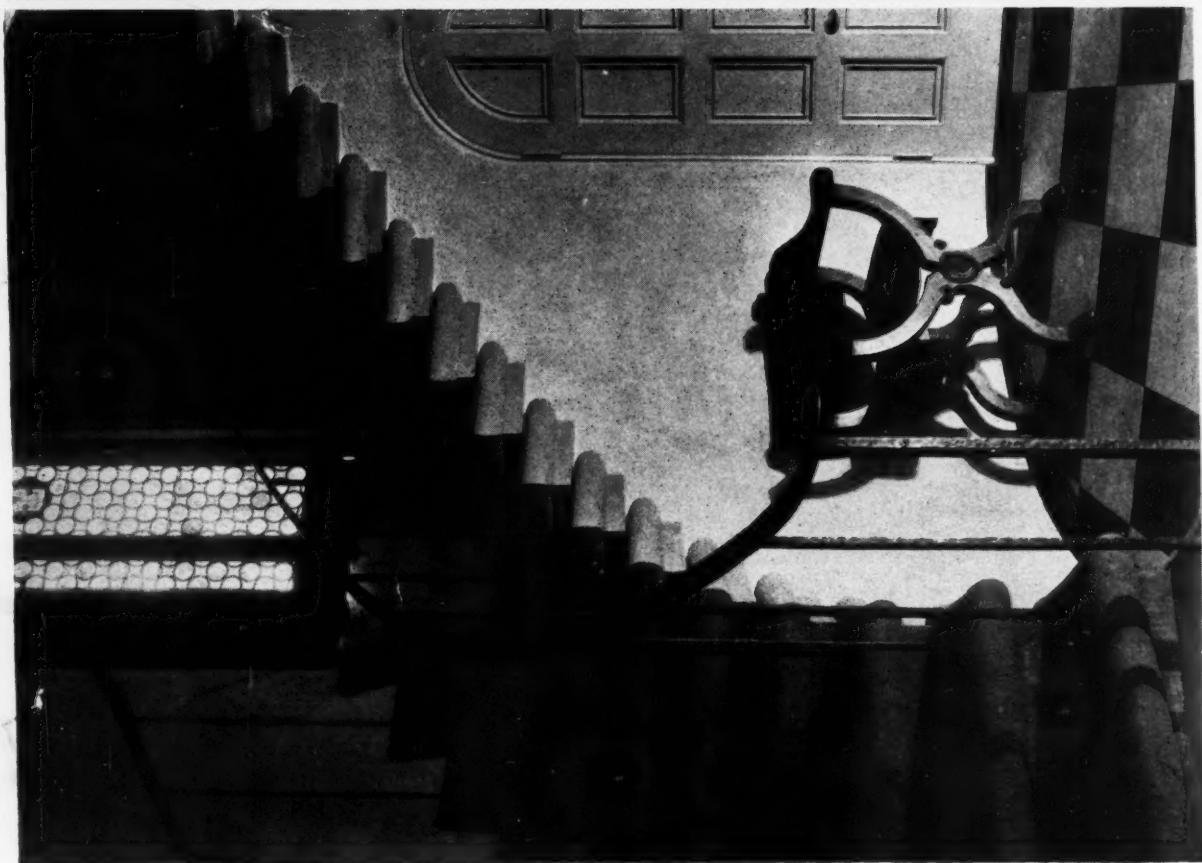
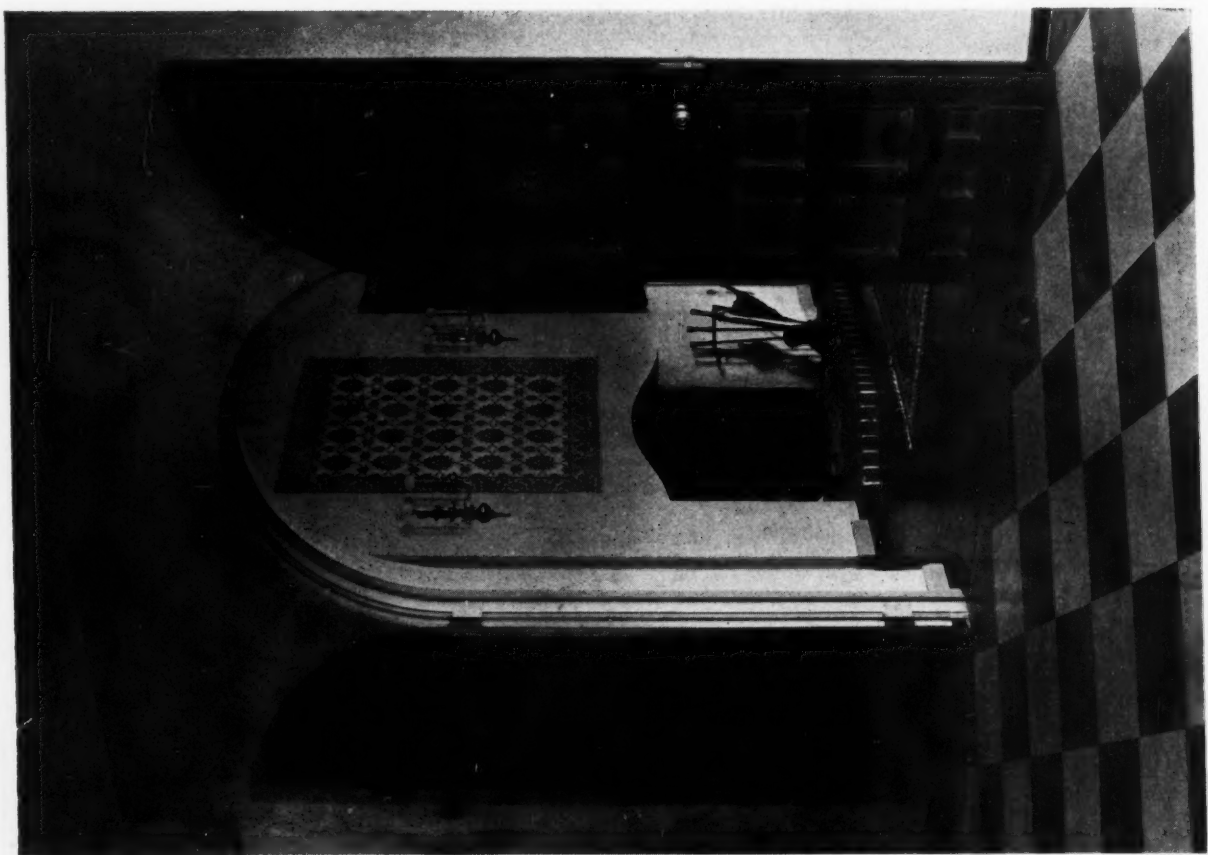


EXTERIORS, RESIDENCE OF MR. O. N. GABRIEL, SAN MARINO, CALIFORNIA. ROLAND E. COATE, ARCHITECT, LOS ANGELES
Photographs by Miles Berne

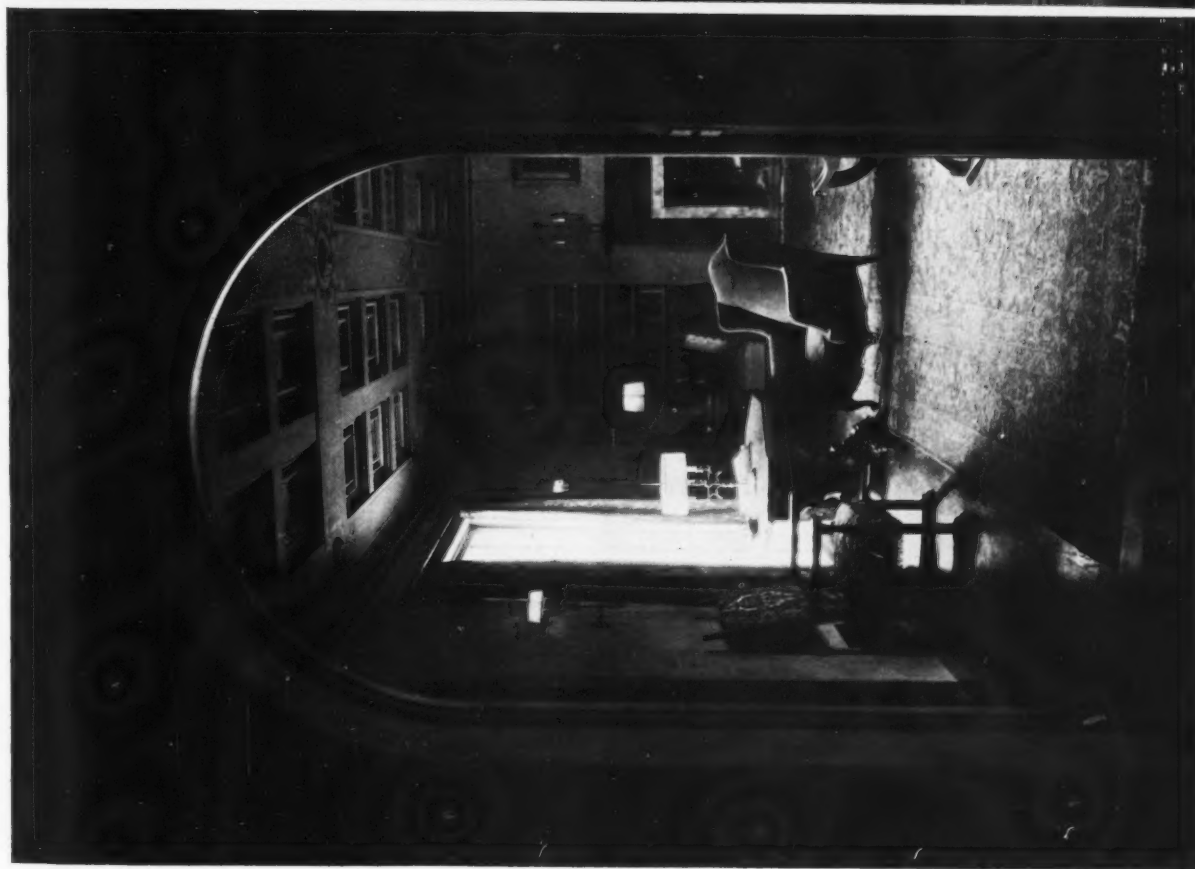


RESIDENCE OF MR. O. N. GABRIEL, SAN MARINO, CALIFORNIA. ROLAND E. COATE, ARCHITECT, LOS ANGELES, CALIFORNIA

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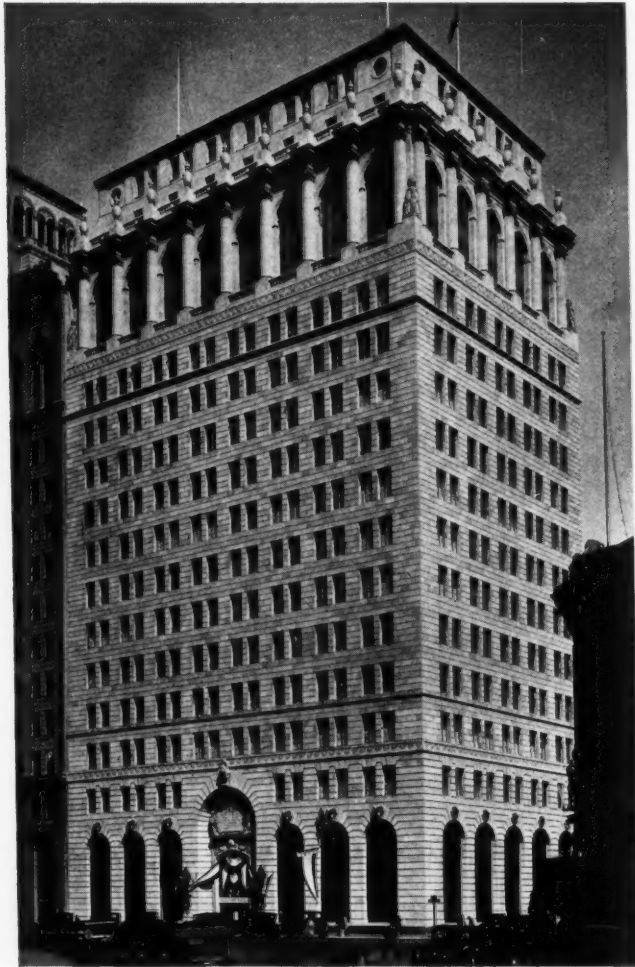


INTERIORS, RESIDENCE OF MR. O. N. GABRIEL, SAN MARINO, CALIFORNIA. ROLAND E. COATE, ARCHITECT, LOS ANGELES
Photographs by Miles Berne



INTERIORS, RESIDENCE OF MR. O. N. GABRIEL, SAN MARINO, CALIFORNIA. ROLAND E. COATE, ARCHITECT, LOS ANGELES. CEILING DECORATED BY JOHN S. MERALDI

Photographs by Miles Berne



PACIFIC GAS AND ELECTRIC BUILDING, SAN FRANCISCO
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Clothed in Granitex Terra Cotta from street to cornice, and roofed with Latin Tile, the new Pacific Gas & Electric Building in lower Market Street is one of San Francisco's monumental structures.

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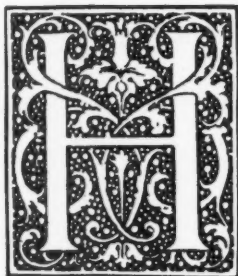
PORTLAND OFFICE: U. S. NATIONAL BANK BUILDING

OAKLAND OFFICE: TWENTY-SECOND AND MARKET STREETS



HARMONIZING HOUSE AND GROUNDS

BY DOROTHEA DE MERITTE DUNLEA
In Collaboration with A. E. Hanson, Landscape Architect



HOUSE and garden joining in friendly fashion—that is the desire of the builder, the gardener, and the home lover who appreciates the beautiful. And as the grounds may be the making of the house, so in turn may the house help to make the garden and grounds distinctive and pleasing, each complementing the other if—and the “if” is all-important for it means fitness, complete harmony, between the dwelling and its surroundings.

Usually the house is built first, though many a beautiful home-lover with a house and garden paradise pictured in his eye plots out certain definite details in the grounds before even a batten is driven. And the architect, who understands the relation between the setting and the structure, will aid in placing the house most advantageously on its site. He will also keep in mind the proper balance between house and grounds, that it may not be termed—as one place was—“the all house.”

After the house is up and finished, architecturally speaking, the grounds will claim attention, and to be successfully handled, must be studied with several points in view. The size of the land will be one of the first considerations—the spaces available for lawns, gardens, walks, drives, and possibly other features desired. The small or moderate sized city lot will demand the most careful planning, for it is a temptation to include many details and features which may tend to overcrowd the grounds, and make it a hodge-podge, unrelated to the house. Simplicity in treatment is always a wise rule for small areas. And delightfully true is it, that simplicity often creates an air of spaciousness.

The large place, by reason of its extensive lands, may

choose, however, to work out an elaborate setting for the house. And this will be justified if it is in perfect keeping with the dwelling.

Then shall the grounds be treated formally or informally? This will depend upon the house to a large degree if



A. E. HANSON, KEW GARDENS, LOS ANGELES
LANDSCAPE ARCHITECT



A. E. HANSON, KEW GARDENS, LOS ANGELES
LANDSCAPE ARCHITECT

harmony is to be achieved. The rustic type of home, low and rambling, shingled perhaps or rock trimmed, will immediately suggest informal treatment for the surroundings. The house of conservative Colonial lines or the magnificent plaster dwelling of Italian trend may on the other hand demand formal treatment. Recognition of the period or the style of architecture is therefore another of the important factors in harmonizing house and grounds attractively.

“Playing up” the gardens and grounds true to type enhances the house and emphasizes the beauty of surroundings. It is the emphasis of type that most frequently calls forth admiration whether it is the little peasant cottage set amidst flowers, or the castle flanked by lawns and stately trees. Points that bring out the individuality of a home should be stressed in every detail of the architectural and planting schemes.

By repetition of lines, forms and colors this effect may be obtained, and at times, contrast will bring out desirable points in house and garden. The selection of such features as walks, drives, walls, gates and arbors, and a right choice of plants is therefore next to be undertaken, as a means of creating harmony between house and grounds. Such features as a summer house, a pool or a friendly seat may be built to reflect the style of the house in the grounds. Garden walls of the same material and finish as the house, gates that match the trim of doors and windows, walks paved like terrace and porch, all help to tie the house and grounds together.

In the planting scheme, there is no better beginning

(Concluded on page 48)



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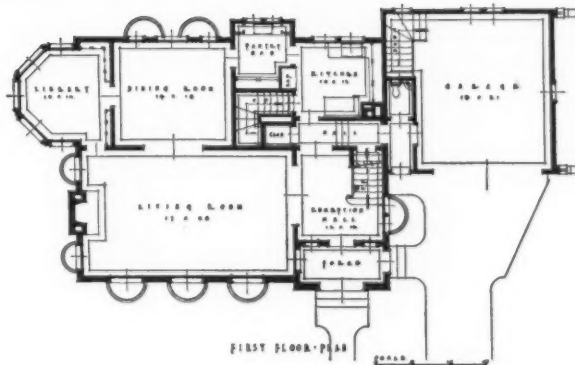
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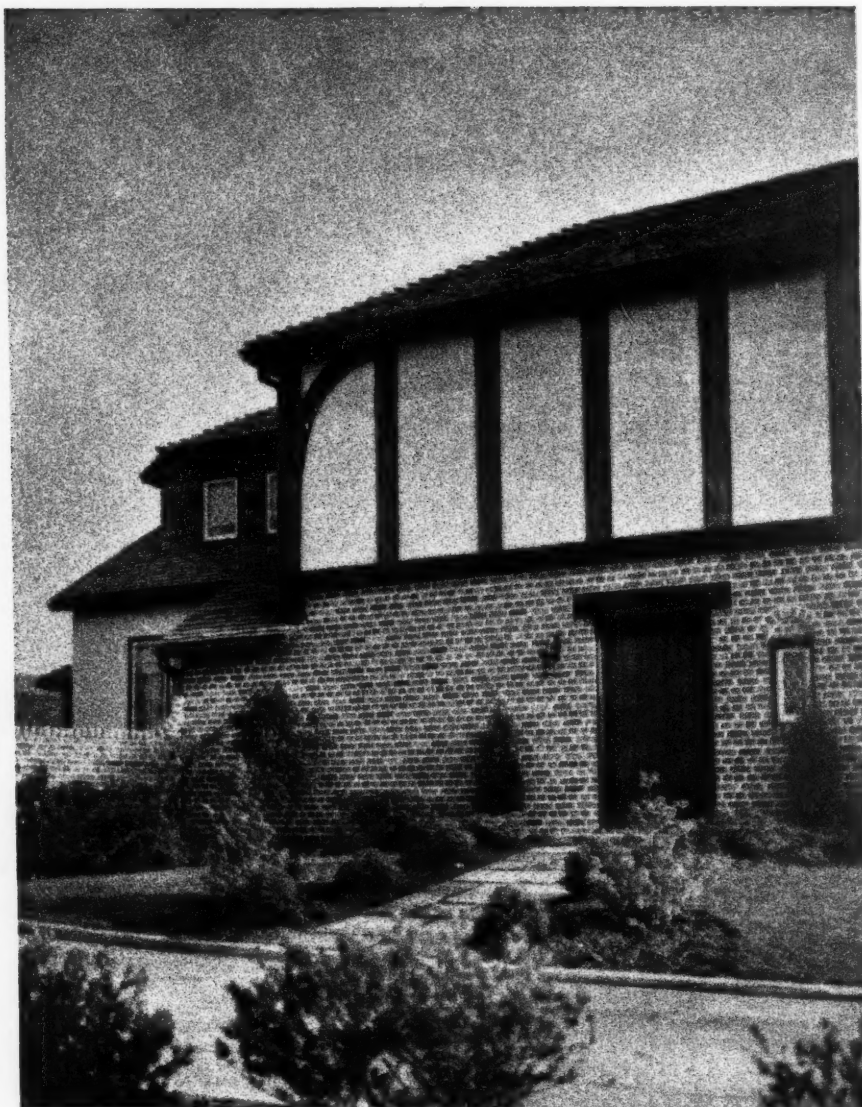


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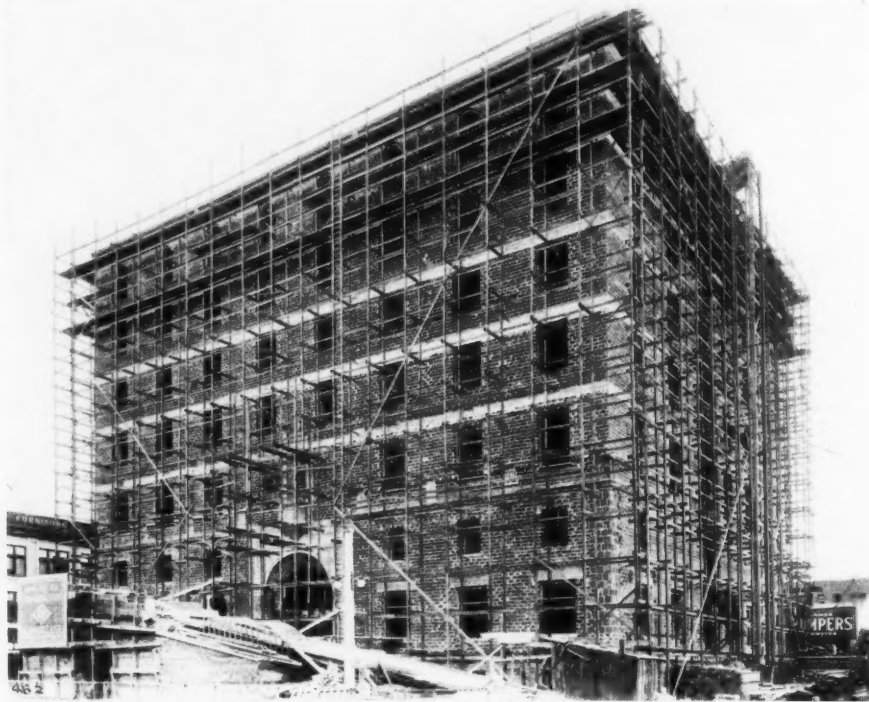
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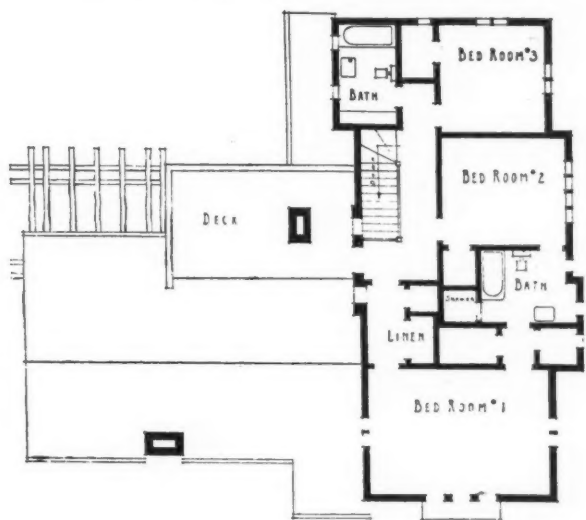
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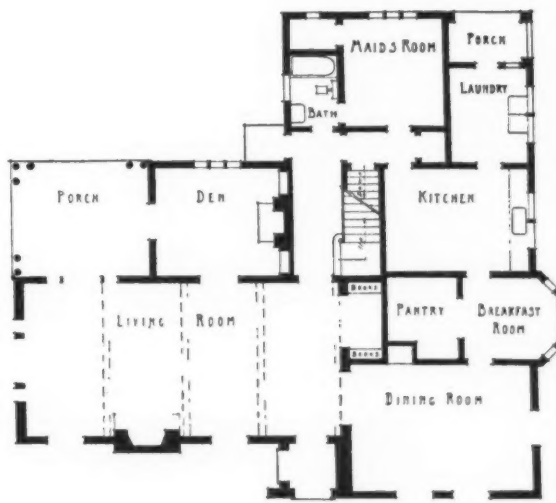
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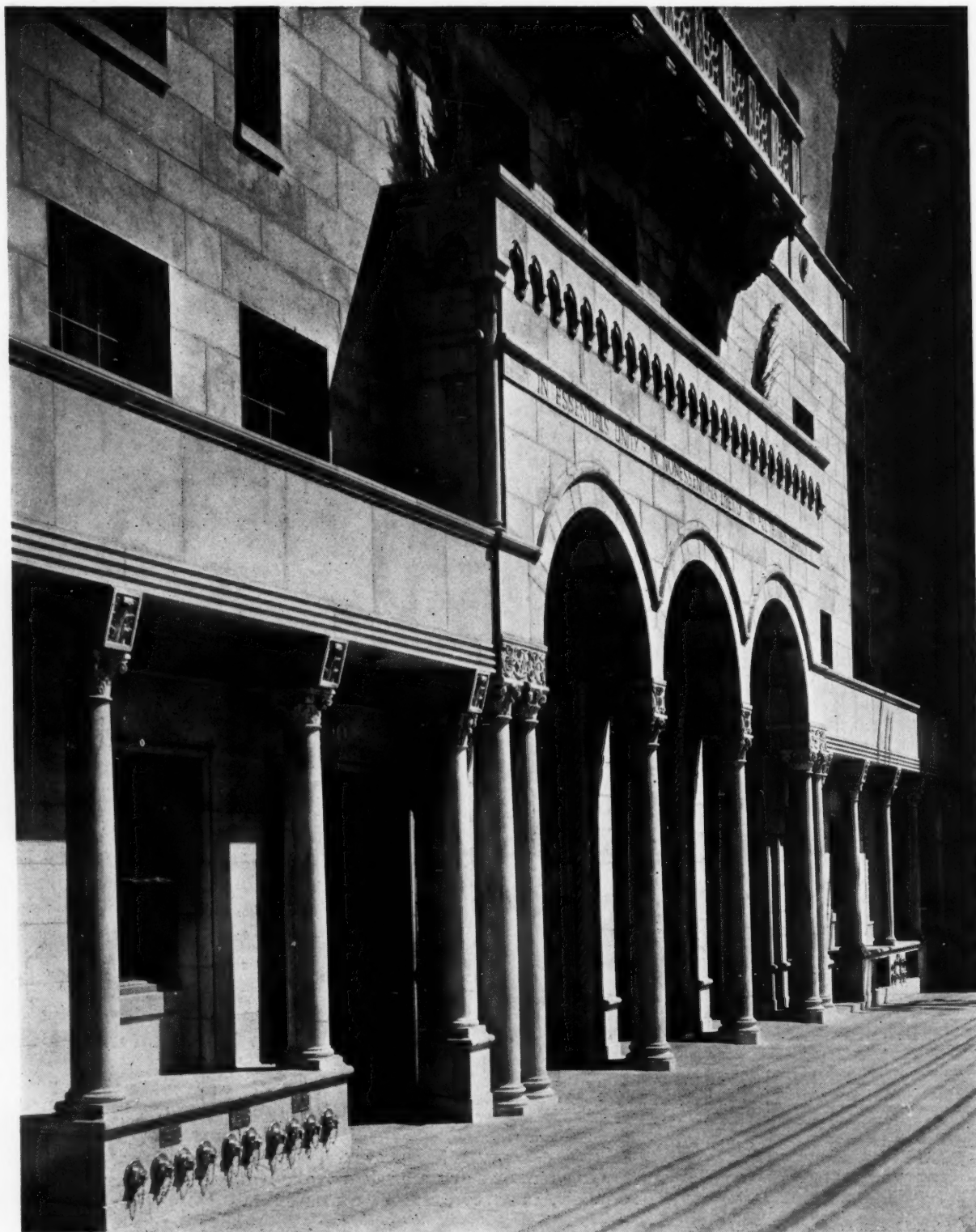


SECOND FLOOR PLAN



FIRST FLOOR PLAN

ABOVE—EXTERIOR; BELOW—FLOOR PLANS, RESIDENCE OF MR. J. P. WHITMORE, SAN MARINO, CALIFORNIA
KENNETH A. GORDON, ARCHITECT, PASADENA, CALIFORNIA



THE FRIDAY MORNING CLUB, LOS ANGELES, CALIFORNIA

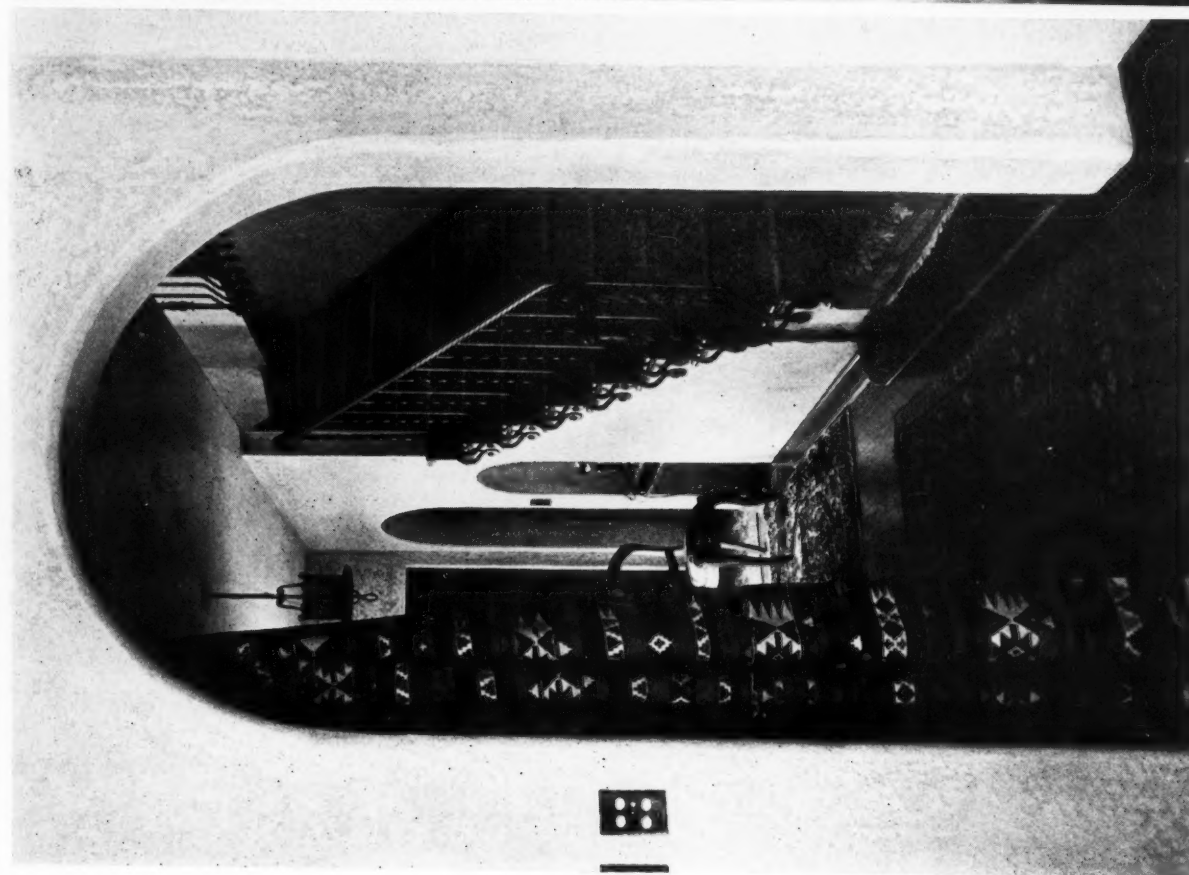
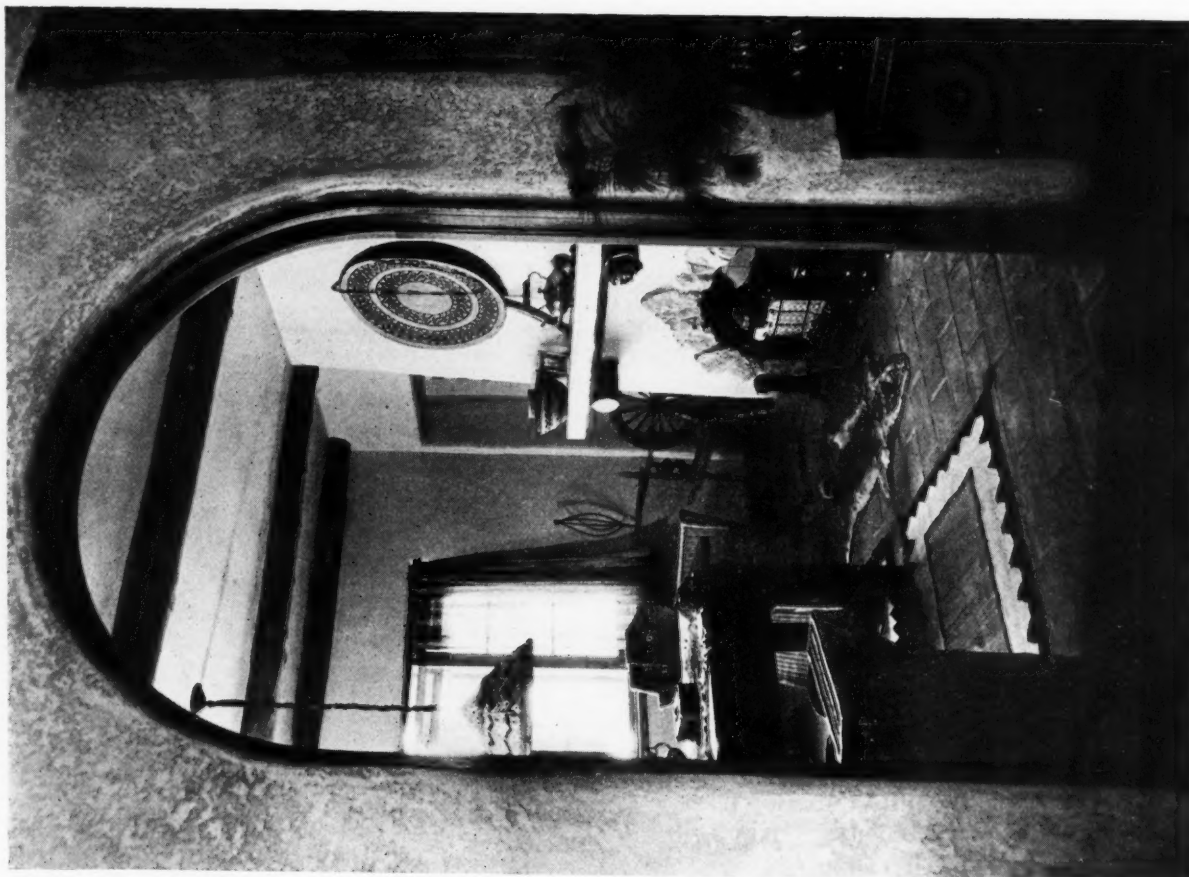
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DINING ROOM, FROM LIVING ROOM, RESIDENCE OF MR. J. P. WHITMORE, SAN MARINO, CALIFORNIA
KENNETH A. GORDON, ARCHITECT, PASADENA, CALIFORNIA

Photograph by George D. Haight



LEFT—STAIR HALL FROM LIVING ROOM; RIGHT—DEN FROM LIVING ROOM, RESIDENCE OF MR. J. P. WHITMORE, SAN MARINO, CALIFORNIA
KENNETH A. GORDON, ARCHITECT, PASADENA, CALIFORNIA

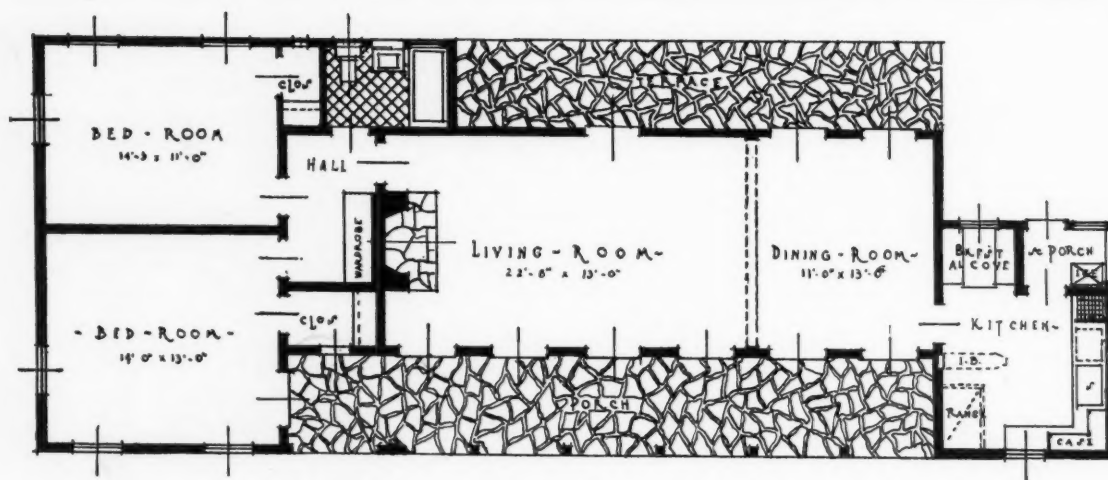
Photographs by George D. Haight



ABOVE—LIVING ROOM, RESIDENCE OF MR. J. P. WHITMORE, SAN MARINO, CALIFORNIA; BELOW—DRAPERIES BY THE MANSFIELD SHOPS, WHITMORE HOME. KENNETH A. GORDON, ARCHITECT, PASADENA, CALIFORNIA

Photographs by George D. Haight

KENNETH A. GORDON, ARCHITECT, PASADENA, CALIFORNIA
 Photographs by George D. Haight



~ FIRST - FLOOR - PLAN ~

ABOVE—EXTERIOR; BELOW—FIRST FLOOR PLAN, RESIDENCE OF MR. MARLOWE MERRICK, LOS ANGELES, CALIFORNIA
H. C. DECKBAR, ARCHITECT

· EDITORIAL ·

Santa Barbara

THE vast extent of damage done to building in Santa Barbara is still hardly realized. Perhaps it impresses a visitor more than it does the citizens, who are too busy to bother over spilt milk. They are hard at work planning a new city, which shall be not only better built, but more beautiful.

In both aims will be encountered opposition. Many owners have been hard hit financially, and will feel compelled to rebuild as cheaply as possible. Some will demand safe structural results but lack the vision to realize that beauty is really a commercial asset, and nowhere more directly so than in a city like Santa Barbara, whose unequaled setting of mountains and sea combines with its unique romantic traditions to make it a Mecca for visitors from all over the world.

Fortunately there is a large element in Santa Barbara of enlightened and energetic citizens. A modern Building Code had been adopted just before the earthquake, to which amendments are being prepared, based upon the reports of experts who have been examining the effects of the shock. A recent ordinance has instituted an Architectural Board of Review to advise the Inspector of Buildings as to the "Character of design, appropriateness, safety, sanitary arrangements and general construction" of all proposed buildings, and is functioning actively. The Plans and Planting Committee is ready with long-studied plans for community improvement, for which the opportunity now presents itself.

Every lover of Santa Barbara—and every lover of beauty must love Santa Barbara—is hoping that the city will seize this opportunity, persuade individual prejudice to join in the community program, and re-construct from its ruins a new Santa Barbara whose loveliness will become the pride of the West.

* * *

What Value Material?

AFTER spending several days in a careful inspection of the damage done by the Santa Barbara earthquake, and receiving the unavoidable conviction that several kinds of weak construction were responsible for much of the wreckage, still the outstanding cause can be put in three words—poor cement mixture.

Much can, and doubtless will be done in the way of devising construction to resist the

strains of earthquake shocks, but it will be of little avail unless the most stern and exacting conditions be required as to the quality of cement and the manner of mixing and pouring concrete. Every architect would profit by seeing for himself these results, so eloquent of laxness in the use of cement.

* * *

California Spanish

TO THE critic who inveighs against importing European architecture into this country, and who preaches developing a native style "to suit our own environment and our modern conditions," we recommend a study of such buildings as that shown in this issue, the house built for Mr. Gabriel, at San Marino, by Roland E. Coate. If this does not fit its environment and meet all the exacting conditions of American life, what could? It is hard to imagine a plan better adapted to the needs of a small family used to the refinements of modern living, better expressed in its outer envelope and its inner frame, more suitable to the balmy California climate, more quietly charming or possessing definitely that elusive quality architects call "character."



RESIDENCE OF MR. O. N. GABRIEL
ROLAND E. COATE, ARCHITECT, LOS ANGELES, CALIFORNIA

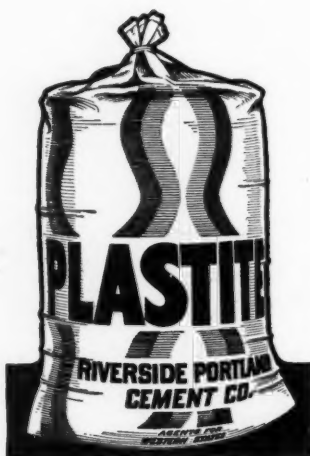


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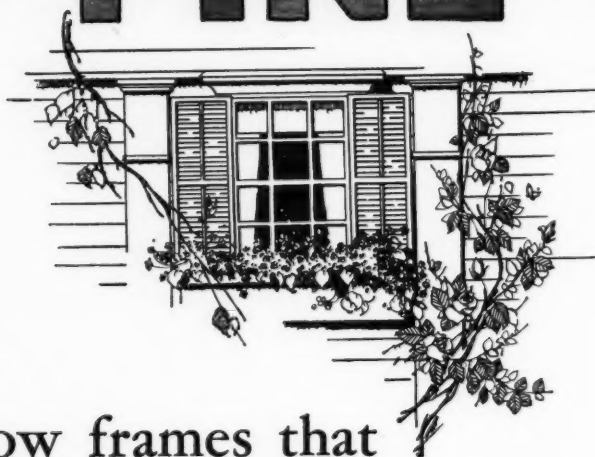
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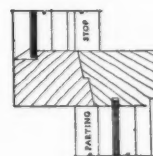
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We have issued for architects and builders a set of California Pine Information Sheets covering all uses of these woods. These data sheets are compiled by our Wood Technologist. They are issued in convenient standard size, in a folder, ready for your files.

HOW WELL DO YOU KNOW THE CALIFORNIA PINES?

• [BY CHARLES W. MEIGHAN] •



HE newspapermen who sent out by wire stories from Santa Barbara in the first hours of the recent disturbance in which they commented on frame buildings having come through the disaster without appreciable injury focused public attention on the value of lumber to the building industry.

Calmer and more authoritative reports from architects, engineers and other experts all seem to agree that whether houses were built of lumber, brick, concrete or any other material, if the design was correct and the workmanship honest, the structures withstood the shock.

But the fact can not be disregarded that a small proportion of the lay public reads the calmer conclusions of the experts, while the mass absorbs the first, hasty newspaper accounts and, subconsciously perhaps, acquires impressions to which it clings tenaciously. Nor can we deny that the public desire for lumber and frame construction has been stimulated to an extent, which no one can foretell with accuracy.

This brings to the fore the consideration of our own California pines and one can not visit the offices of the California White and Sugar Pine Manufacturers Association without being impressed by the fact that there are many things we at home on the Pacific Coast do not know about these two great species of trees.

Of course, we all know in a general way that the Sierra Nevada mountains, from the Oregon line south are heavily timbered. But how many are aware that government experts figure that there is about 320,000,000,000 feet—not million, but billion, mind you—standing in this region?

Did you know that although they have been cutting timber on a large scale in Texas, for example, for over sixty years, there is more virgin timber standing in California today—four times over—than there was in all the vast expanse of Texas before the first sawmill started to grind?

In addition to the huge Sierra Nevada range timber already mentioned, there is seventy billion feet of Redwood in Northeastern California. It is estimated that thirty-three billion feet of sugar pine stands in the great Sierra territory, and one hundred seventy billion of California white pine.

The sugar pine of California is easily the aristocrat of the pines, in size, texture, beauty and commercial value. It is called the *Pinus lambertiana*. The California white pine is scientifically known as *Pinus ponderosa*.

The difference between the two pines is about the difference between rich cream and rich milk, the sugar pine being the cream of the forest.

California white pine is white, soft, light, free from resinous substances and partaking very closely of the qualities of the old Michigan and Wisconsin pine. It is smaller than the sugar pine and contains a smaller percentage of clear lumber, is not quite as soft and cheese-like in the quality of the wood as the sugar pine.

Sugar pine stands on an average of from 150 to 175 feet in height and from 3 to 10 feet in thickness, although individual trees frequently reach much greater size. It is clear of limbs to a great height and is unusually free from blemish and disease.

It is possible to cut sugar pine boards and planks any width and thickness and to get soft, clear lumber such as no other pine can produce. It cuts as easily as cheese,

either with or across the grain, and is easily workable for any purpose. It is practically free from resinous substances, has no raised grain in the wood to work, dress, paint and enamel.

Present production of sugar pine is not more than 250,000,000 feet annually, and it is estimated that the present stand will last for 130 years. Replanting and re-growing of sugar pine are occupying the attention of the timber men of California and it is believed that these efforts will insure the supply, at the present rate of production, for at least 200 years.

California white pine is being cut at the rate of about 900,000,000 feet annually at present and the virgin stand of this timber is estimated to provide a supply for 200 years. Like sugar pine, California white pine can be had in boards of great width as well as thickness. Wooden counter tops are frequently made from it. It is free from smell, resin, raised grain, etc.

Both sugar and white pine possess almost the same physical properties, but for the most exacting requirements, sugar pine is given the preference.

The architect may build a house from roof to foundation with either California white pine or sugar pine, but for floors that will be subjected to heavy use, these woods are not recommended. The woods are both easy to handle, light to lift, easy to nail, easy to tack, easy to saw, easy to split. They are straight-grained, contain no substances that interfere with paint or varnish and are a delight to carpenter, mill-worker and painter.

From both of these California pines are manufactured sashes, doors, trim, mouldings, interior finish, exterior finish and trim, columns, panels, frames, ceiling, partition, sheathing, forms, furniture, bee-hives, factory stock of all kinds that requires light, soft, easily workable woods.

Sugar pine is extensively used in the building of pianos and organs. Most piano keys are made of this stock. It is incomparable for drain boards and for similar purposes, as it does not swell or warp. It is preferred for ship decking for the same reasons.

With the development of California sawmills, California pine is now perfectly manufactured, dried, dressed and prepared for market. The writer recently enjoyed a trip over the logging road of the Standard Lumber Company, into the Sierras from Sonora, and the inspection of this great plant, operating its own railroads, hotels, mills and accessories was a revelation of an orderly empire within an empire. Several of the California mills are the largest in the world from a standpoint of the money invested in the mill properties themselves. Needless to say, there is nothing crude about the California pine or the mills producing it for a market which has spread to a great degree in recent years.

The California White and Sugar Pine Manufacturers Association has its offices in the Call Building, in San Francisco, and there maintains a most efficient organization. Its members produce something like 85 per cent of all the pine cut in its trade territory.

C. Stowell Smith, the secretary, is gifted and experienced for the work he is doing. Other officers who have done so much to make the Association a success are:

R. D. Baker, president; G. D. Oliver, vice-president; E. H. Cox, treasurer; A. S. Titus, traffic manager; Austin L. Black, advertising manager; E. P. Ivory, manager of trade extension.

Activities of the Association include handling the grading and inspection of the lumber produced; working for and creating uniformity in producing, gathering and

(Concluded on page 49)



New Club House, Olympic Golf and Country Club, Lakeside
 Associate Architects, Bakewell & Brown, and John A. Bauer, San Francisco
 General Contractors, K. E. Parker Co., San Francisco
 Painting and Decorating, William Nielson, San Francisco

Naturally, in a building sponsored by the Olympic Club, you can expect everything in keeping with its standing as the foremost Club in the Athletic world.

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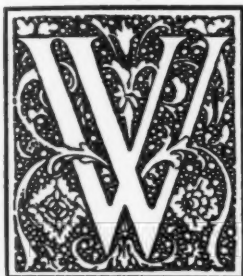
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SNAP JUDGMENTS UNFAIR TO BUILDING INDUSTRY

• BY K. M. GRIER •

Executive Representative, Blue Diamond Company, Los Angeles, California



WELL, I guess they won't build any more brick buildings in Santa Barbara!

That's what a friend said to us over the telephone less than forty-eight hours after the Santa Barbara earthquake.

Had such a remark come from some erratic, mentally irresponsible person, we should have allowed it to pass without challenge. But we happened to know this man fairly well and knew that he should be better informed. It was hard to connect him with a statement so utterly ridiculous.

We decided to pay him a visit, and this is what we told him, in substance:

Blue Diamond is not in the brick business in any capacity. Neither were any of our materials damaged in the quake. But we are interested in the building industry as a whole. We want to see every commodity and every class of construction fairly judged and not made the victim of spontaneous prejudice, created by the fear and hysteria of a great calamity.

Unfortunately, bias and false conclusions rise quickly on the heels of any disaster. Haste too often closes the door to facts and permits unwise and unjust decisions.

But who is the authority that dares, in haste, to condemn the mighty record of service enjoyed by masonry construction for more than five thousand years?

Italy, for a single example, has been rocked by violent earth tremors for centuries. Yet Italy continues to build, and build safely, with brick. There are many buildings in the quake zones of Europe which have withstood earth shocks of the utmost violence for hundreds of years. They are standing today—monuments to the durability and safety of good masonry construction.

The ancient Romans had no advantages over present-day materials or craftsmanship. They merely saw to it that designs were sound, bricks were solid, their lime mortar correctly prepared, and the necessary bonds and ties provided to insure everlasting permanence. Those factors are all that are required today.

Poor designs, poor workmanship or careless preparation of materials, *regardless of the type of construction*, would have proved disastrous at Santa Barbara. And they will prove unsafe always.

From the ruins of Santa Barbara will rise a safer and more beautiful city. But its reconstruction will be based upon sound designs, good materials and honest workmanship.

And, with its future left in the hands of competent architects, engineers and building experts, brick will receive its just share of recognition. Such men achieve success by dealing with the truth. They will not permit gossip or emotional prejudice to influence them against a type of construction that has endured successfully for thousands of years, and will endure for thousands more.

OCEAN PARK CONSTRUCTION RAPID

• BY A. R. ROBERTSON •

IN THE construction of the Egyptian Ballroom and amusement pier at Ocean Park, Santa Monica, Calif., which is said to be the largest ocean pier on either coast devoted entirely to amusement purposes, unusual methods were employed by the Cowles-Perrine Organization of Los Angeles, architects and engineers, acting for the Ocean Park Realty Corporation.

Two chief objects were sought: rapid erection and fire-safety. When plans got under way in March, it was intended to start building the superstructure April 15 and to have the pier complete on May 30, ready for the earliest summer tourists.

But considerable delay was experienced in driving the piles which form the base for the building, so that erection of the steel did not begin until May 18. The date then set for completion was July 4, and a system of construction was employed which, it was believed, would make that possible. The plan succeeded; formal opening, with all the main buildings complete, even to the finished decoration, took place June 27.

Fire-safety was guaranteed, not only by the fact that the main structure was built entirely of fireproof ma-

terials, but also by the demand which the Ocean Park Realty Company made upon all concessionaires, that they also employ materials of the same kind.

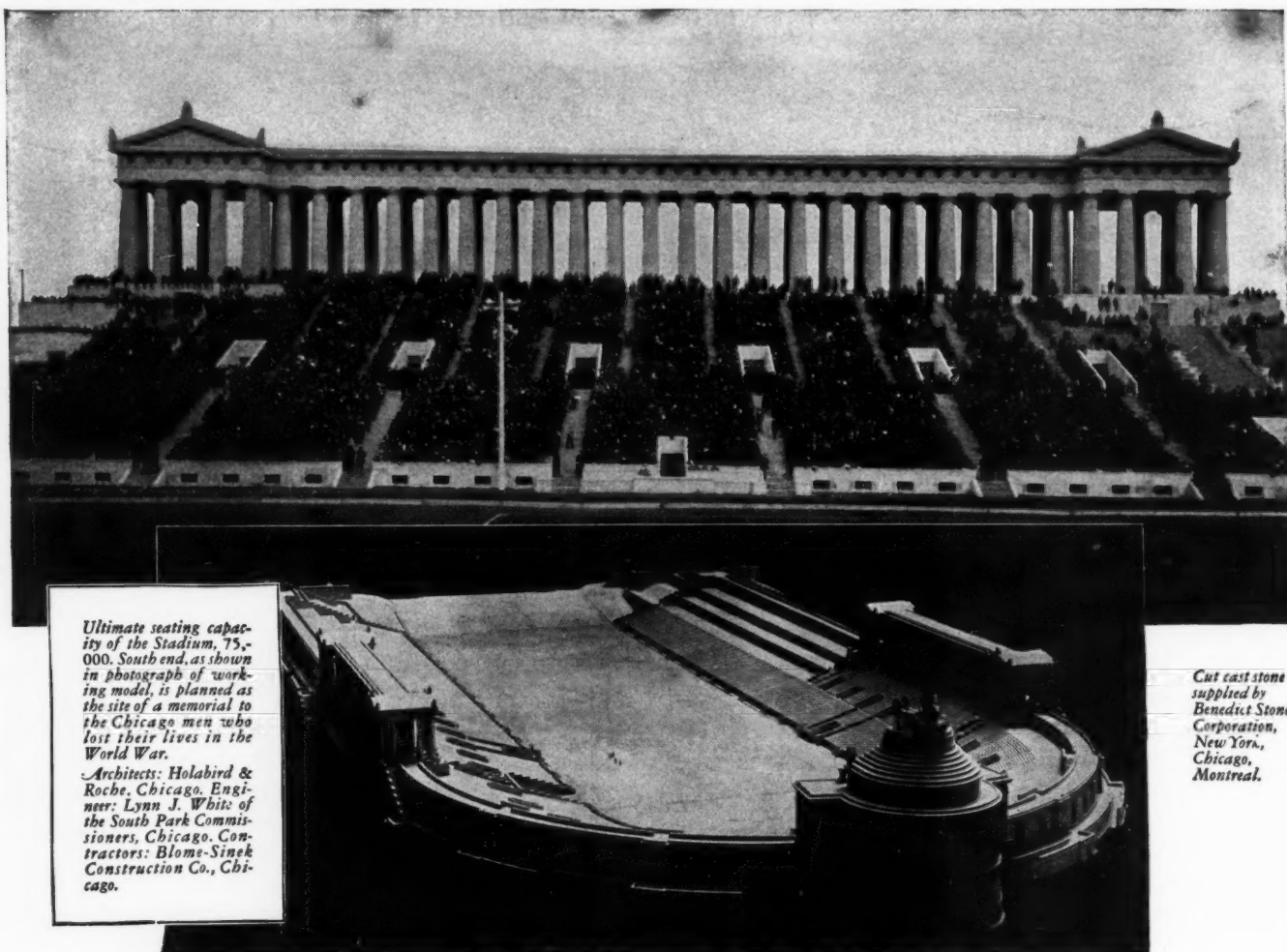
The main structure consists of the Egyptian Ballroom, with billiard hall, bowling alleys and electrical transformer-room adjoining. There are some forty concession-buildings, of which the principal are the Carousal and the Fun House, the latter owned by G. M. Jones of Los Angeles. All these are set on a reinforced concrete floor-deck, 12 inches thick, 1200 feet long and 240 feet wide, supported by wooden piles and built-up girders.

All walls and partitions of the main buildings were erected of structolite concrete, a mixture of structural gypsum with gravel and sand. In the ballroom there are 70,000 square feet of this construction.

Exterior walls and bearing partitions are 6 inches thick. On the outside, welded steel fabric was stapled directly to the walls to form a reinforcement for the exterior facing of stucco. This gypsum material was poured in metal forms. In keeping with the Egyptian style of the design, the walls are battered one-half inch per foot of height.

Over the entire structure a roof of Sheetrock-Pyrofill

(Concluded on page 49)



Ultimate seating capacity of the Stadium, 75,000. South end, as shown in photograph of working model, is planned as the site of a memorial to the Chicago men who lost their lives in the World War.

Architects: Holabird & Roche, Chicago. Engineer: Lynn J. White of the South Park Commissioners, Chicago. Contractors: Blome-Sinek Construction Co., Chicago.

Cut cast stone supplied by Benedict Stone Corporation, New York, Chicago, Montreal.

Ancient Greece in Modern Concrete

To those who still believe that the architectural beauty of the ancients can be expressed only in traditional materials, Grant Park Stadium, Chicago, will be a revelation.

This monumental structure takes you back to "the glory that was Greece." And it is done entirely in concrete. This includes the columns and other exterior architectural details, all of which are of cut cast stone. Thus beauty, as well as construction, is made permanent.

Grant Park Stadium is only one of a great variety of structures that impressively demonstrate the wide range of adaptability concrete offers to the architect—a range not within the possibilities of any other material.

* * *

If you are interested in receiving additional data on concrete in stadium construction, address the nearest office listed below. Ask for leaflets S-112 and S-104.

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Tomb of Annia Regilla, the so-called Tempio Del Dio Redicolo

Has Stood Eighteen Centuries in Quaking Italy —because it was well built

A WEALTHY Greek promoter and rhetorician built on his estate, between the Appian and Latin Ways outside the walls of ancient Rome, a beautiful brick tomb to his beloved wife, Annia Regilla, eighteen centuries ago, when the thorough and artistic methods of bricklaying characteristic of Hadrian's day were still practiced.

In spite of innumerable earthquake shocks, such as California has never ex-

perienced, in spite of floods and storms, in spite of attacks and sieges, this structure with its brick facing properly bonded to the masonry backing stands today practically what it was when originally built in the second century of our era, except for the depredations of man.

By Frost, nor Fire, nor Flood, nor Time, nor even Earthquake Shock—when built right—are well burned Clay Structures destroyed.



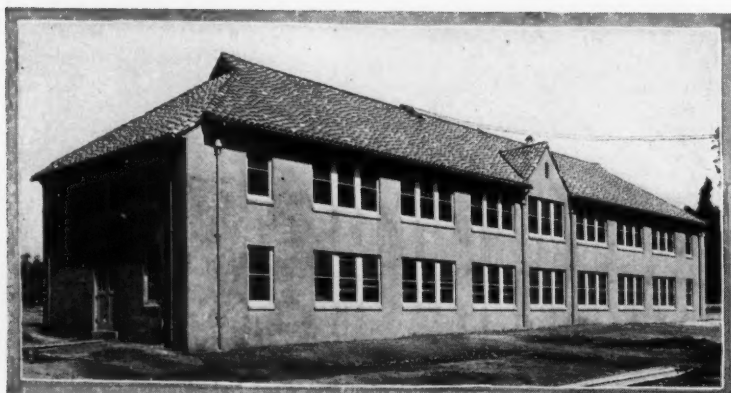
Side Detail of the Tomb of Annia Regilla

On one side of the tomb, the two rectangular pilasters are replaced by semicircular niches in which are set half octagonal columns. Pilasters and columns which rest on Attic bases and terminate in Corinthian capitals, chiseled

out of the brick, are of a beautiful clear red, while the field of the building is of a yellowish ochre tone. The thin brick which are laid in a knife edge joint and in perfect alignment are of the finest quality.

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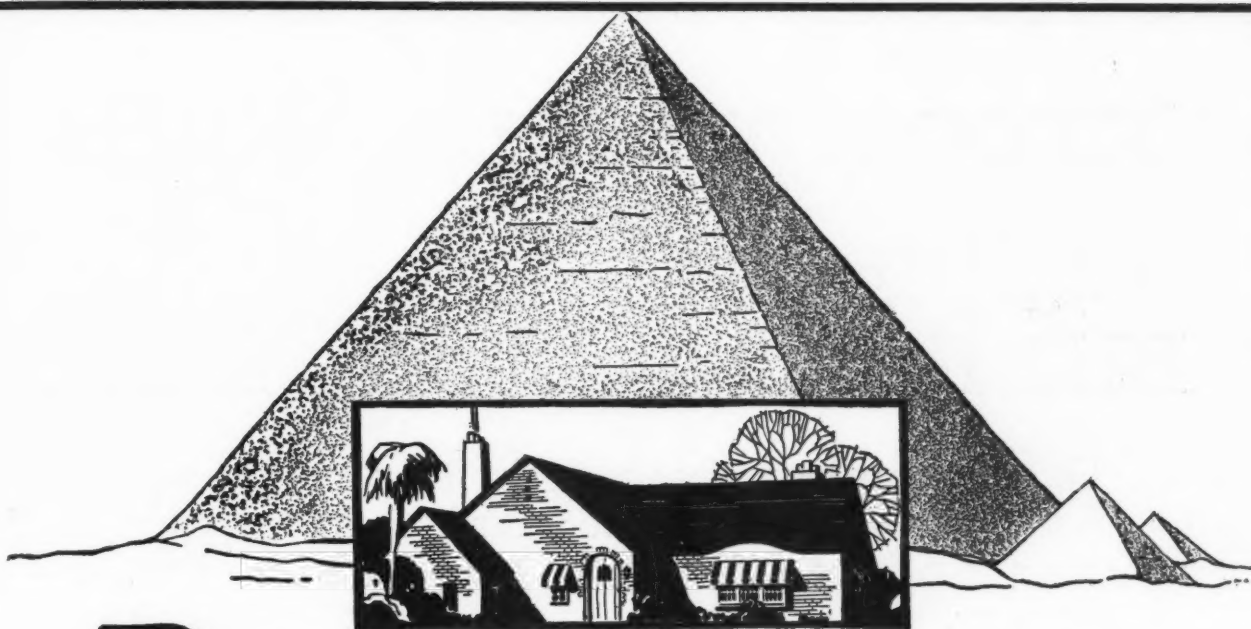


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BRICKS that were laid when the pyramids were young are still in use—Brick buildings in New England as old as this nation, are still doing service—Santa Barbara today provides conclusive proof of the ability of sound brickwork to withstand assault.

Brick never grows old. But like every good thing, brick loses its value when not properly used. Santa Barbara has demonstrated that there is no material or type of construction that can survive shoddy work or faulty designing. Permanent construction comes only when sound materials are employed by capable workmen under strict regulation and supervision.

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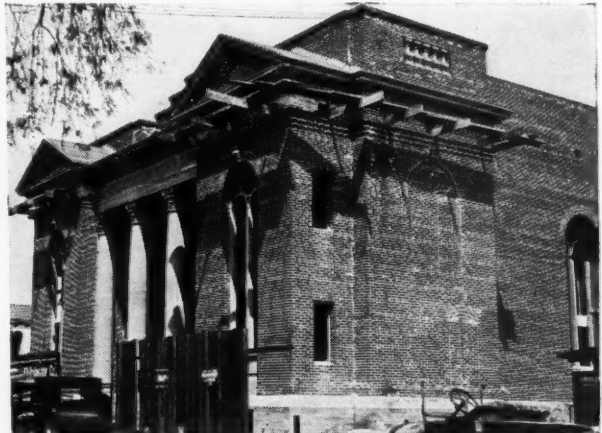
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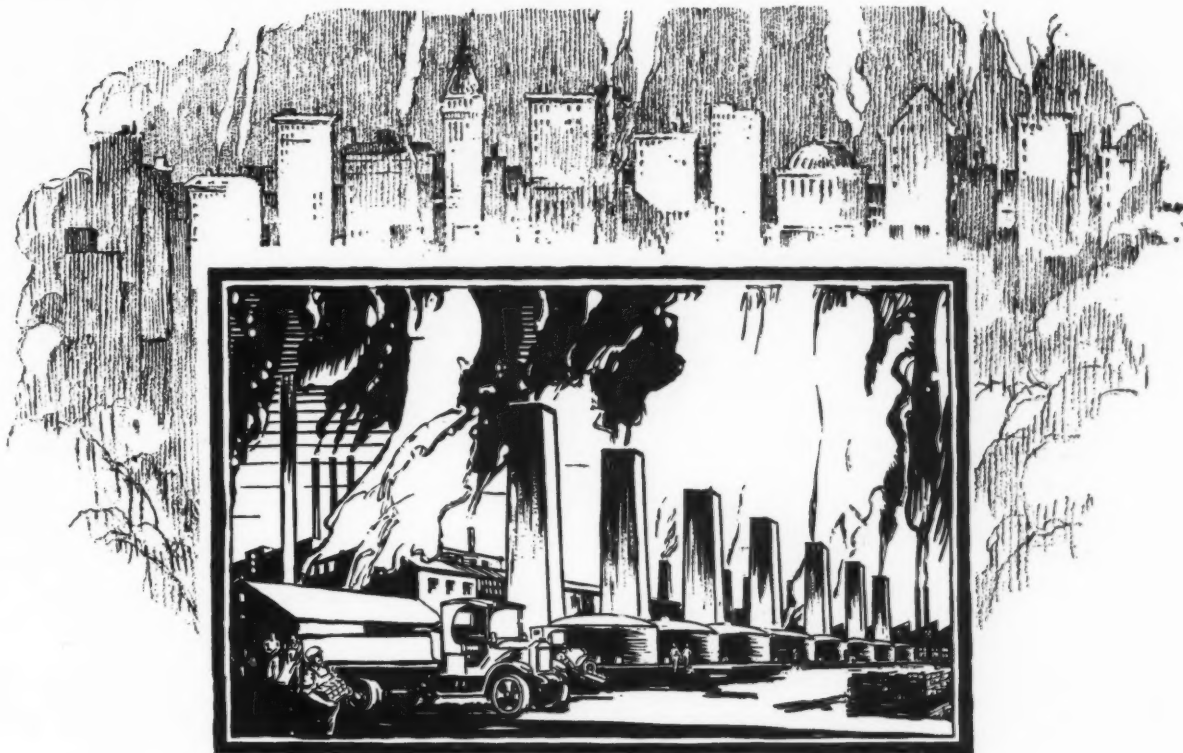
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ROBERT LINTON, General Manager
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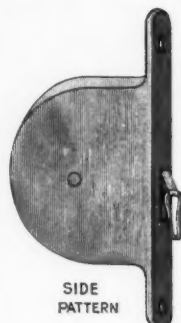
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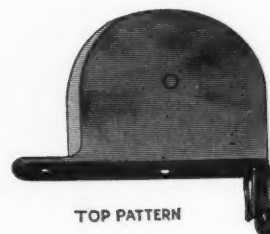
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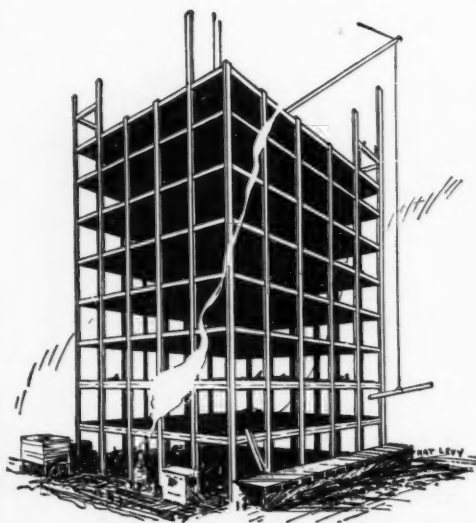
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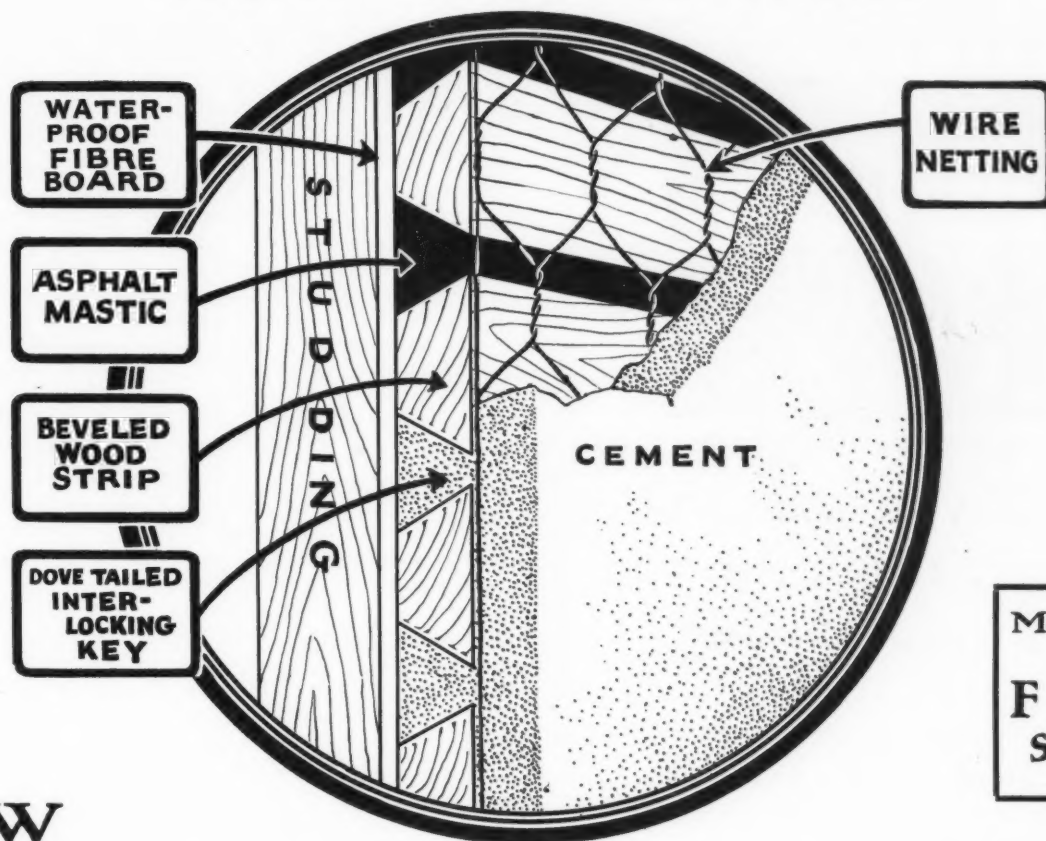
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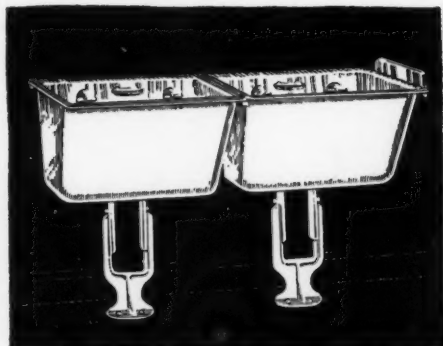
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But you wouldn't wash your face in any unglazed laundry tray. You would see the scum and the absorbed moisture and filth from previous washings. Their foul or musty odors would repel you.

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HARMONIZING HOUSE AND GROUNDS

(Continued from page 19)

than lawns, green and velvety, to creep up to the very house itself, to border the walks and drives, to set off pleasingly every detail and feature of both house and garden.

Trees also do much to blend the structure with its site. Those trees of the same country as the house architecture give naturalness and atmosphere to a place. Pines and fir trees of all kinds go with the Colonial house, from the smallest cottage to the most elegant mansion. Plams, magnolia trees, and the banana belong to the southern type of residence while the sycamore and live oak grow in friendly fashion near the rustic or the chalet type of home.

To soften walls, to erase the hard lines of walks or drives, shrubs, flowers and vines are to be used generously. Such shrubs as coprosma or pittosporum may be banked against the house itself. And even geraniums, in a colorful splash, may snuggle the garden closer to the house. Flowers planted along walks or even in beds within the walks, are a means of blending these architectural features as part of the landscaping. Vines climbing over the house bring house and garden together, and vine-covered trellises or arbors extending into the garden are a happy way of introducing the house to the garden.

Color, in the planting scheme, that echoes the house or its trimming is often a means of achieving a pleasing relationship between the house and the grounds. Flowers that catch the hue of rose tinted walls, or that match the yellow trim of quaint shuttered windows, have a way of making the house and the garden belong to each other. And as this harmony is established between the structure and its setting, the more perfect will be the picture, the more enjoyable the home, both within and without.

* * *

OFFICIAL LIST, A. I. A.

(Concluded from page 33)

- Ehrenpfort, Arthur T., 373 Russ Bldg., San Francisco.
Ferris, Geo. A., Box 363, Reno, Nev.
Herold, P. J., 718 Hearst Bldg., San Francisco.
Joseph, Bernard J., 74 New Montgomery St., San Francisco, Douglas 1996.
Kleeman, Otto, 5627 58th St., S. E., Portland, Ore.
Krafft, Elmer J., Phelan Bldg., San Francisco, Kearny 1517.
Lenzen, Theodore W., Humboldt Bank Bldg., San Francisco, Douglas 2876.
McCall, Chas. W., Central Bank Bldg., Oakland, Oakland 2993.
Newman, William A., Post Office Bldg., San Francisco, Market 301.
Newsom, Sidney B., Nevada Bank Bldg., San Francisco, Sutter 2815.
O'Brien, Matt., 68 Post St., San Francisco, Kearny 1482.
Politeo, Matthew V., 1st Natl. Bank Bldg., San Francisco, Kearny 3954.
Raigucl, W. O., c/o Tropic Potteries, Inc., Glendale, Calif.
Schmidt, Herbert A., 45 Kearny St., San Francisco, Kearny 4139.
Scholz, Arthur G., Phelan Bldg., San Francisco, Douglas 1923.
Steilberg, Walter T., 1 Orchard Lane, Berkeley, Calif., Berkeley 3440.
Schroepfer, Albert, Nevada Bank Bldg., San Francisco, Sutter 4657.
Upton, Louis M., 454 Montgomery St., San Francisco, Kearny 4429.
Voorhees, Fred D., Central Bank Bldg., Oakland.
Wythe, Willson J., Central Bank Bldg., Oakland.

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- E. J. Molera, 2025 Sacramento St., San Francisco.
Maybeck, Bernard R., Lick Bldg., San Francisco, Douglas 1454.
Schulze, Henry A., 5163 Eagle Rock Blvd., Eagle Rock, Los Angeles.
* * *

STORY OF THE TRADE SCHOOL

A pamphlet bearing the above title has been gotten out by the Industrial Association of San Francisco, which reviews the progress of these schools since their start early in 1922. It is illustrated and makes an interesting account of a worth-while movement.

* * *

According to J. W. Ford, Jr., houses with walls built of Bishopric Base withstood the earthquake shock in Santa Barbara without exception.

HOW WELL DO YOU KNOW THE CALIFORNIA PINES?

(Concluded from page 35)

distributing useful information, including folders and booklets for the consumers, an ideal working file for the architect, trade extension and market promotion; advertising intelligently and constructively and, last but by no means least, working wisely for reforestation.

How well do you know the California pines? Whether architect, contractor or home-owner, there is small excuse for lack of familiarity with these great woods of the Sierras, for the Association is ready at all times to give anyone such information as they may desire. It is yours for the asking.

* * *

OCEAN PARK CONSTRUCTION

(Concluded from Page 37)

construction was placed on steel framing. This system consists of laying gypsum wallboard between the T-rails which form the sub-purlins, then laying a steel reinforcing fabric over the purlins, and pouring a mixture of structural gypsum and wood fibre over the reinforcement, and finally applying a surface of waterproofing material. The under-surface of the wallboard forms the ceiling, which can be decorated as desired. This roof-construction has been used extensively in numerous schools, colleges, theaters and industrial plants throughout the country, especially where it is desired to insulate the roof so as to prevent condensation of water on the ceiling. In this case, the total thickness of the gypsum roof-deck is 2 1/2 inches, and the total surface covered exceeds 30,000 square feet.

Material for wall and roof construction was supplied by the United States Gypsum Company, through its Los Angeles organization, which also contracted for the installation. A total of 11,000 square feet of Sheetrock wallboard and 250 tons of structural gypsum were required for the roof, and 100 tons of Structolite for the walls.

* * *

NEW OAKLAND SCHOOLS USE CANNON CORRIDOR TILE

THE city of Oakland has adopted corridor tile manufactured by Cannon & Co. of Sacramento for the corridors in 40 odd schools, the first of which are now being constructed under the \$11,000,000 Bond Issue. This corridor tile was originated by Cannon & Co. in 1914 and has a wear-proof and sanitary partition wall which is plastered on the class room side and left exposed on the corridor side.

The advantage of corridor tile over plaster is that in ten year's time the corridor tile walls show no wear or discoloration whatever. They are lined with the same material used in the manufacture of face brick and are just as durable. If the children mark the walls the janitor can easily remove the markings with a bucket of water and a broom. They are made in slightly variegated buff color which absorbs a minimum of light and is said to have a beneficial effect on the deportment and tractability of the students.

Educators consider the development of this interior tile as a worthy contribution to the construction of modern schools.

In the Oakland schools, the corridor tile is carried only to the top of the doors, above which common tile or wood studding is plastered according to design.

Cannon & Co.'s corridor tile has also been used in Sacramento and Stockton schools, as well as for the interior of the new Richardson Springs hotel and for lining the lobby and dining room of this hotel.

These corridor tile are made in 3- and 4-inch thickness for non-bearing walls and 8- and 12-inch thickness for bearing walls. The cost of these tile walls is only slightly greater than walls made of common tile plastered.

The Skyline of the West!



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The skyline of the West
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—is yearly growing more imposing.

With this growth has come
a greater and greater appreciation of the West's
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Raymond Granite

A surprisingly large percentage of "our finest buildings" are built of this wonderful stone.

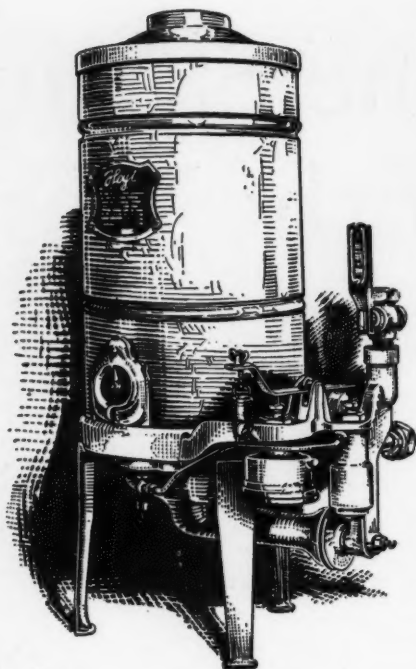
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*Shown in Sweet's Architectural Catalogue,
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CALIFORNIA STATE CIVIL SERVICE EXAMINATION ARCHITECTURAL DESIGNER BUREAU OF ARCHITECTURE

STATE DEPARTMENT OF PUBLIC WORKS

The California State Civil Service Commission announces that an examination for the position of Architectural Designer, Bureau of Architecture, State Department of Public Works, will be held in San Francisco as soon as practicable. The salary range for this position is from \$285 to \$350 a month.

DUTIES AND MINIMUM ENTRANCE QUALIFICATIONS

The duties of this position are under general administrative and technical direction to exercise independent architectural judgment and assume responsibilities in studies and computations necessary for the preparation of designs and estimates; to design and plan important buildings and groups of institutional buildings; and to do other related work.

The examination is open to all American citizens who have reached their twenty-first but not their sixty-first birthday, who are in good physical condition, and who meet the requirements outlined below.

Applicants must have graduated with a degree from an institution of recognized standing with major work in architecture, and must have had not less than five years general architectural experience, of which at least one year shall have been in the direction or performance of important architectural work. They must also possess supervisory or administrative ability or a high degree of technical skill. In the absence of such a degree at least four years of additional general architectural experience will be required. The completion of each full year of such course shall be considered the equivalent of one year of such additional experience.

EXAMINATION PLAN

The examination will consist of two parts, (a) a non-assembled practical test to be followed by (b) an assembled oral interview. Applicants must secure a rating of at least 70% in the non-assembled practical test in order to be entitled to participate in the assembled oral interview and an average rating of 70% in the oral interview in order to pass the examination and become eligible for appointment.

The non-assembled practical test will consist of a problem in design, to test the applicants' creative ability and practical knowledge of the type of work to be performed as outlined under "Duties". The subject of this practical test will be announced later. The practical test may be carried out at home. The practical test will not carry any weight in the final examination rating but will be considered only as an elimination test.

The oral interview will take place in San Francisco and will be conducted by a special board of examiners appointed by the Civil Service Commission.

APPLICATIONS

Applications may be secured at the addresses listed below. In addition to the outline of experience set forth on the usual application blank, applicants must submit, with their applications, a supplementary statement, on letter size paper typed on one side only, giving in topical outline form an expansion of the more important phases of their experience. In preparing this supplement, applicants should endeavor to reflect the exact degree of responsibility carried, the magnitude and character of the work for which they were responsible, the organization supervised, including the title and duties of their immediate superior, as well as any important work performed by them.

Persons desiring to enter this examination may secure application blanks from the State Civil Service Commission, Room 331, Forum Building, Sacramento; Room 116,

State Building, San Francisco; Room 1007, Hall of Records, Los Angeles; and from the following offices of the State Free Employment Bureau:

771 Howard Street, San Francisco
401 Tenth Street, Oakland
176 South Market Street, San Jose
916 H Street, Fresno
35 North Center Street, Stockton
206 Court Street, Los Angeles
106 B Street, San Diego

Completed applications must be filed with the State Civil Service Commission, Forum Building, Sacramento.

STATE CIVIL SERVICE COMMISSION.

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HEAVY TIMBER MILL CONSTRUCTION

Architectural designers and draftsmen will greatly appreciate a recent important contribution to technical information issued by the National Lumber Manufacturers' Association, Washington, D. C., under the title, "Details of Heavy Timber Mill Construction." This bulletin illustrates good practice in heavy timber mill construction detailing and furnishes a distinct service not elsewhere available in compact and simple form. It will be mailed free upon request.

From the preface of the bulletin it is indicated that heavy timber detailing has become a specialty. Those who specialize in mill construction have sets of details designed especially to meet their needs. Those who only occasionally are called upon to design buildings of this class usually improvise details as the need develops. This bulletin is intended primarily for this latter class, though its use by specialists as well would help standardize procedure. Its use in the drafting room should save the time of draftsmen and designers and help toward a more widespread knowledge of good practice in timber detailing. Proper detailing is the essential feature of most types of construction. The general design may be sound in every respect but unless the connections are properly proportioned and secured, lack of stability and sometimes actual failure occur.

These details are based upon a careful field examination of recently erected buildings built in conformance with well established design principles.

* * *

In the Los Angeles metropolitan area, fifteen municipalities report a June total of building permits of \$19,772,882, which is 41% above June a year ago.

* * *

Seven Western cities are among the twenty-five leading cities in the United States, reporting largest volume of building permits in the first half of 1925. Only four cities in the United States exceeded Los Angeles and only nine exceeded San Francisco in permits issued during that period.

* * *

BOHAN COMPANY PICNIC

E. R. Bohan & Company, paint and varnish manufacturers, maintaining four stores in Los Angeles, treated 250 employees and their families to a picnic last month at El-Merrie-Del, Kagel Canyon. It was a huge success.

"FYER-WALL"
ALL METAL FIRE DOORS

High Grade Sheet Metal and Kalamein Work

FIRE PROTECTION PRODUCTS CO.
3117 TWENTIETH STREET, SAN FRANCISCO



Time to Design the LIGHTING



THE lighting system is vitally important and should be designed before wiring is done. Now, while the plans are before you, call in a representative of this company. If you want unusual and beautiful lighting effects this is the thing to do.

Estimates and special designs cheerfully furnished. Fixtures made according to specifications. Telephone or write for our de luxe booklet, "The Fine Art of Lighting."

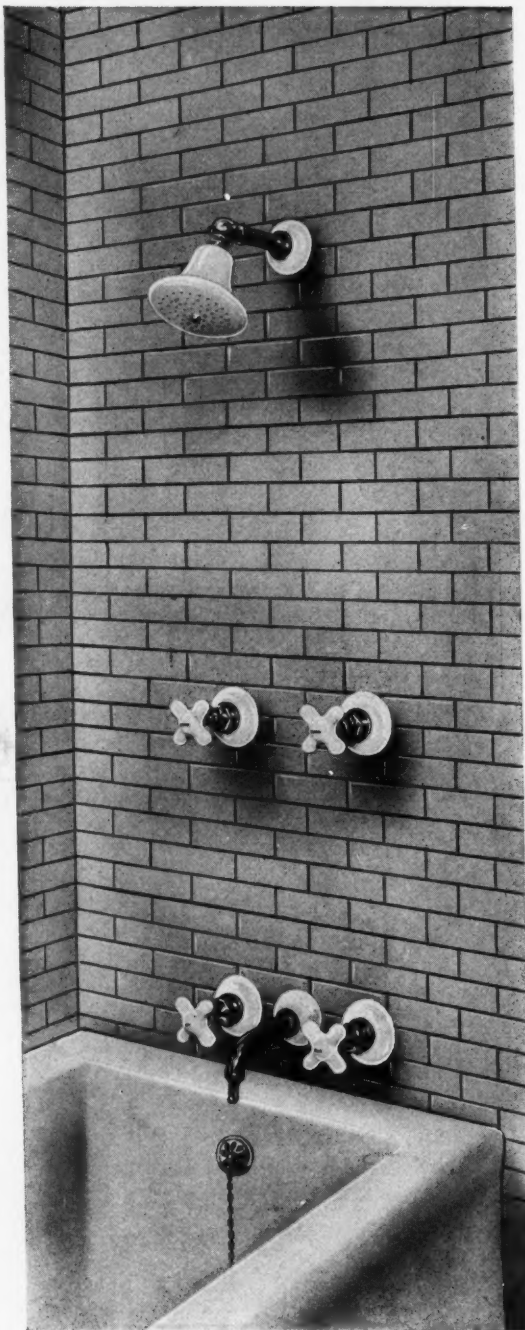
FORUE-PETTEBONE CO.

Lighting Equipment
818 South Figueroa Street

LOS ANGELES

BEAR BRAND

Tub Filler and Shower



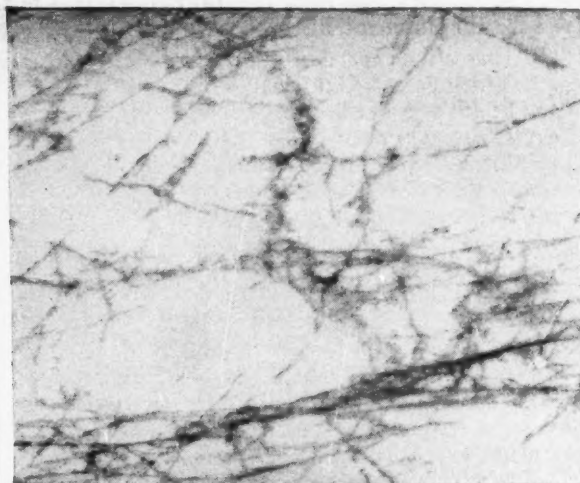
"The California"

FIG. 27

This fixture is a completely assembled and tested unit—ready for installation.

The "Shasta" All-China Spout (Fig. 33) may be used on this combination if desired.

STANDARD BRASS CASTING COMPANY
Manufacturers of High Grade Plumbing Brass Goods
OAKLAND, CALIFORNIA



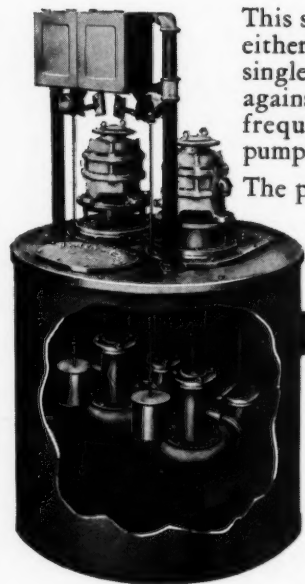
MARBLE

—and its correct treatment and installation are matters requiring expert craftsmen. Our splendid organization is always at the service of the architect and the builder.

JOSEPH MUSTO SONS-KEENAN COMPANY

535 North Point, San Francisco
1064 S. Broadway, Los Angeles 1430 Webster St., Oakland

The Byron Jackson Improved Sewage Pump



This sewage ejector, built for either wet or dry pit service, single and duplex, is proof against the many troubles so frequently associated with pumps used for such service.

The pump is so designed that no sewage comes in contact with either the shaft or the bearings. It is proof against misalignment. Perfect lubrication assures long life.

And back of the pump is Byron Jackson service and an experience in pump design and production that extends over half a century.

BYRON JACKSON PUMP MFG. CO., INC.
Factory and Main Office, Berkeley, California

Branches:
San Francisco, Los Angeles, Visalia, Salt Lake City, Portland, Ore.

PLUMBING MANUFACTURERS CONSOLIDATE

AS A result of the consolidation of two large Western plumbing fixture manufacturers, the Washington Iron Works of Los Angeles can now supply the largest and most complete line of plumbing fixtures made in the West, it is reported from the general offices.

The products of the big seven-acre factory of the West Coast Porcelain Manufacturers, of Millbrae, California, manufacturing vitreous china fixtures, will now be marketed in Southern California under the brand name of the Washington Iron Works of Los Angeles, pioneer Pacific Coast manufacturers of porcelain enameled fixtures.

According to G. B. Schneider, General Manager of the Washington Iron Works, the union of the two companies products will form the most complete line of plumbing fixtures made on the Pacific Coast. The line of vitreous china ware made by the West Coast Porcelain Manufacturers, includes toilets, lavatories, urinals, etc., while the Los Angeles plant produces porcelain enameled bath tubs, lavatories, urinals, sinks, and laundry trays.

"The first and most important effect of the consolidation is the extension of the Washington Guarantee to include vitreous china fixtures," Mr. Schneider said. "Effective immediately we give the same guarantee on vitreous china fixtures as we do on porcelain enameled fixtures. In brief, this guarantee, signed by both the Washington Iron Works and the plumbing merchant, agrees to replace, free of charge, any Washington fixture which develops any defect after installation. Every important fixture in the bath room, kitchen and laundry is now fully protected by this guarantee.

"Those who know about the defective, non-guaranteed plumbing fixtures which have flooded Southern California will welcome this guarantee as the most important step which has yet been taken to protect home builders. Plumbing merchants throughout Southern California are able to supply these guaranteed fixtures immediately," Mr. Schneider explained.

"The vitreous china fixtures of the West Coast Porcelain Manufacturers have won praise throughout the West for their fine quality and they have been installed in thousands of homes and buildings on the Pacific Coast.

The capacity of the two plants is more than 1,700 fixtures daily, it is announced, and over 750 men are employed. The two factories, which cover 10 1/4 acres, consume over 200,000 pounds of raw materials daily. In volume and value of output these consolidated plants form one of the leading manufacturing organizations on the Pacific Coast.

CONSTRUCTION LESSONS FROM SANTA BARBARA

(Continued from page 5)

Bearing walls and other walls of unit masonry construction shall be tied together at the level of each floor line from outside to outside of the structure, by continuous iron rods or by other bonds of equivalent value, and shall also be tied to all vertical partition walls wherever possible.

Veneer finish, cornices, and ornamental details shall in every case be bonded into the structure so as to form an integral part of it. This applies to the interior as well as the exterior of the building.

Bracing. Bracing for lateral forces shall be calculated to resist the stresses set up in each bent by the acceleration or equivalent lateral pressure, taking account of the moments of inertia or the area, as the case might be, of the entire structure above the bottom chord of the bent.

San Francisco, reporting a June building permit total of \$4,661,024, shows a 14% gain over the May record, a 19% gain over June of last year, and increases of 10% and 39%, respectively, over the figures for June, 1923, and June of 1922.

Portland's June record of \$4,772,020 in building permits established a new high record for that city. It shows an increase of 103% over June, 1924.

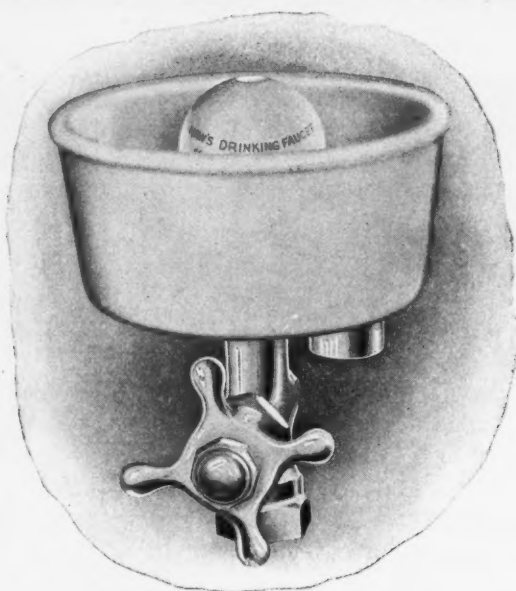
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THE NEW
and
BETTER
BUILDING
PAPER

Triplo-Sheath

IT IS
absolutely
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STRABLE
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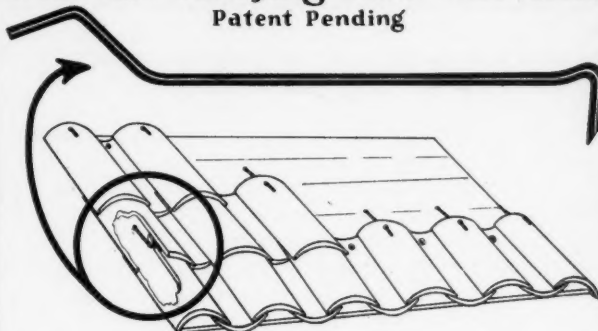
Haws Model No. 3A

There is a Haws model for every architectural purpose.

**HAWS SANITARY
DRINKING FAUCET
COMPANY** 1808 HARMON ST.
BERKELEY, CAL. U.S.A.

Sullivan Roofing Tile Fastener

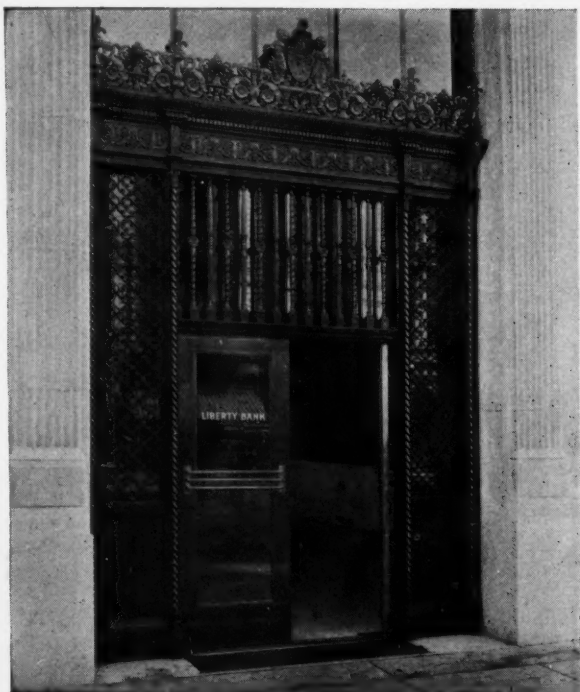
Patent Pending



Sullivan Roofing Tile Fasteners make a better job. They eliminate the 2x3 wood strips, saving time, labor, and material. Eliminating the wooden strips prevents broken tile caused by nailing.

These time-, money-, and tile-saving fasteners are made of No. 11 galvanized wire, packed 1000 in a carton, and weigh 23½ pounds per 1000 packed. *Price on application.*

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Second and Grove Sts. • Oakland, California



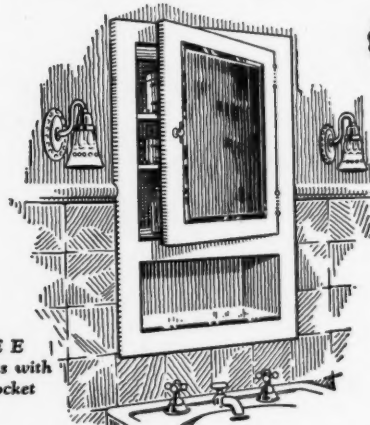
Liberty Bank Building, San Francisco. H. A. Minton, Architect
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HESS CABINETS and MIRRORS

Snow-White Steel



STYLE E
to recess with
open pocket
below.

HESS Cabinets and Mirrors are built to the highest standard of workmanship and finish.

While cheaper goods are made there is nothing equal to ours, at the prices we ask. Seekers for good cabinets are invited to ask us to demonstrate this, by submitting samples for comparison.

See *Sweet's Index*; or write for illustrated booklet.

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Makers of Hess Welded Steel Furnaces.
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